JUN 26 1929

HYGEIA

THE HEALTH MAGAZINE

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HYGEIA

THE HEALTH MAGAZINE

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Briefs about Hygeia Authors

DR. CLAUDE P. FORDYCE is a hiker, camper and outdoor enthusiast; he is also a prolific writer on outdoor topics. DR. LAUREN H. SMITH heads the women's division of the department of mental and nervous diseases in a large eastern hospital. A portion of this paper was given recently as a radio address over Station WIP, Philadelphia.

PROF. ANTON JULIUS CARLSON of the University of Chicago is a noted physiologist, whose work on hunger and appetite control has brought him world-wide recognition. DR. EMANUEL KRIMSKY, an eastern physician, begins in this issue a series of three articles on tonsils and adenoids, employing the question and answer method of presentation.

JOSEPH JASTROW, PH.D., was formerly professor of psychology at the University of Wisconsin; he is now noted as a writer on popular psychology. "The Girl Who Grew Up Too Soon" is the first of two articles written for HYGEIA by CLARA BASSETT, consultant in psychiatric social work for the National Committee for Mental Hygiene. DR. FRED E. CLOW outlines for parents the best features of summer camps for boys and girls; from reading Dr. Clow's article one can draw his own conclusions in regard to the insanitary equipment and practices at some camps. DR. B. C. H. HARVEY'S anatomy series continues to give the infinitely complex facts of anatomy as simple a treatment as has yet been accorded them.

DR. D. C. WHARTON SMITH has revised for HYGEIA a widely appreciated radio talk broadcast recently under the auspices of the Maryland state board of health. LULU G. GRAVES, a former hospital dietitian, is now a nationally known consultant in dietetics; she is a frequent contributor to these pages. SARAH MCGIFFERT'S picture story for children was prepared as a part of her work for the Elizabeth McCormick Memorial Fund of Chicago and is being presented to the public through HYGEIA.

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Hunter Mendel Osler

Health Almanac

JULY, 1929

1 A GENIUS does not need a system; he creates one.—Joseph Löbel.

2 HIGH BLOOD PRESSURE has taken its place, like those other things of the spirit such as the weather, the menopause, the income tax and the total depravity of grandchildren, as a staple topic of conversation on the porches of summer cottages and in the lobbies of winter hotels.—Clendening.

3 EVERY MAN is a moving miracle; but there are some that may justly move the wonder of all the rest.—Wanley.

4 ON JULY 4, in celebration of their independence, Americans burn gun powder and develop a considerable number of unnecessary cases of tetanus, or lockjaw.

5 CECIL JOHN RHODES was born, July 5, 1853, in England. A sufferer from tuberculosis, he was sent to Natal in South Africa for his health. He became one of the richest men in the world by developing the diamond fields. In a remarkable will he left nearly his entire fortune to found the Rhodes scholarships.

6 OURS IS A SINCERE DOUBT as to whether the question, "And what did you do during the Great War?" might not embarrass, among others, God.
—Franklin P. Adams.

7 IN AN INTERVIEW, the father of Peggy Joyce says that as a child she tried to please everybody—and apparently she's still trying.

8 TODAY WE TAKE FOR GRANTED the silence of the operating room, but to reach this Elysium we had to travel the slow road of laborious research, which gave us first the chemical agents; and then brave hearts had to risk reputation, and even life itself in experiments, the issue of what was for long doubtful.—Sir William Osler.

9 FOR IN ALL TIMES, in the opinion of the multitude, witches and old women and imposters have had a competition with physicians.
—Lord Bacon's "Advancement of Learning."

10 BENJAMIN DOOLITTLE, pioneer physician and surgeon of Massachusetts, also a minister, was born, July 10, 1695.

11 GOD AND THE DOCTOR we alike adore,
But only when in danger, not before;
The danger o'er, both are alike requited,
God is forgotten, and the doctor slighted.—Pope.

12 SIR WILLIAM OSLER, famous physician, author and philosopher, was born, July 12, 1849, and died in 1919.

13 THE TERM QUACK is applicable to all who, by pompous pretences, mean insinuations and indirect promises, endeavour to obtain that confidence to which neither education, merit nor experience entitles them.—Samuel Parr.

14 JOHN HUNTER, famous authority on comparative anatomy, noted as a surgeon and one of the most famous physicians of all time, was born in Glasgow, July 14, 1728. He wrote numerous essays on blood, inflammation, and natural history.

15 SELF-KNOWLEDGE IS DIFFICULT because it demands intellectual honesty . . . it is rare because it demands that one shall always be able to distinguish between the man one thinks one ought to be and the man one actually is.
—Arnold Bennett.

16 ON JULY 16, 1228, Pope Gregory IX canonized Francis; today in all parts of the civilized world, we find schools, hospitals, convents and monasteries ruled by the Franciscan order, members of which venerate St. Francis of Assisi as their patron saint.

17 WATCHING WHAT GOES ON in one's head is an experience just as truly as watching what a newborn baby does when you threaten to drop it.
—James Harvey Robinson.

18 HENRY FORD SAYS that wrong food is the chief cause of sin, disease and crime—which indicates absolutely that the invention of the Model T was sufficient to exhaust entirely one human brain.

19 A RUNAWAY TEAM in Evanston, Ill., stopped at a red traffic light—but horses have horse sense enough to stay away from gin.

20 A VEGETARIAN ANNOUNCED PLANS the other day to do a back dive off the Brooklyn bridge. It would be just like a vegetarian to do some big thing for humanity like that.—N. E. A. Barbs.

21 THERE ARE ALWAYS SOME who passionately seek to hold fast to the past; there are always others who passionately seek to snatch at what they imagine to be the future. But the wise man, standing midway between both parties and sympathizing with each, knows that we are ever in the stage of transition.—Havelock Ellis.

22 GREGOR JOHANN MENDEL, Austrian priest and botanist, who formulated the famous Mendelian law of heredity, was born, July 22, 1822, and died 1884.

23 I KNOW THE NIGHT is near at hand,
The mists lie low on hill and bay,
The autumn sheaves are dewless, dry;
But I have had the day.
—Vesperal by S. Weir Mitchell, M.D.

24 BARON LARREY, surgeon-in-chief of Napoleon's armies, died, July 24, 1842. In his will Napoleon wrote: "I bequeathe to the surgeon-in-chief of the French army, Larrey, one hundred thousand francs; he is the most virtuous man I have ever known."

25 THEREFORE THAT MIRACLES have beene I doe beleeve, that they may yet bee wrought by the living I doe not deny; but have no confidence in those which are fathered on the dead; and this hath ever made me suspect the efficacy of reliques.
—Sir Thomas Browne in "Religio Medici."

26 AL CAPONE is in a cell in Philadelphia where he is treated just like the other convicts. Harry Sinclair practices pharmacy in his prison. This proves that a drug-store training is bound to come in handy some time.

27 SUPERSTITION is the spleen of the soul.—Enfield.

28 THERE IS ONE UNERRING MARK by which a man may know whether he is a lover of truth in earnest; viz., the not entertaining any proposition with greater assurance than the proofs it is built on will warrant.—John Locke.

29 SIMON BARUCH, pioneer American scientific hydrotherapist, who did much to develop public baths for New York, was born, July 29, 1840, and died, June 3, 1921.

30 AN EDUCATED MAN knows when a thing is proved and when it is not. An uneducated man does not know.—Lord Morley.

31 THE DOCTOR is the first person we meet when we come into the world, and, unless we go out by accident, he is the last with us when we leave it. Such devotion is worthy of the highest praise, and that is often all the doctor gets for it.—Lampton.

Safety First in the Water

By Claude P. Fordyce

The principal strokes can be learned on land and then applied in confidence in the water.

SUFFICIENT reason that we give serious attention to summer's most popular sport —swimming—lies in the fact that last year drowning was second in the list of casualties, while automobile accidents were first and Fourth of July accidents third.

Through knowing how to handle ourselves safely in the water and how to help others who may be in distress, we remove the hazard from one of the most beneficial sports that the family can enjoy. If we can save but one life, and it may be our own, we are amply repaid for our endeavors. Many deaths each year are due simply to ignorance of the elementary principles of swimming and of proper methods of resuscitation.

It is astonishing that so many persons are daily exposed to water dangers without knowledge of how to swim. An inventory of persons who take excursions on steamers, who hit wilderness waterways in canoes, or who go rowing on lakes out from summer resorts reveals the surprising fact that not one in fifty could take care of himself if the boat capsized. This percentage also holds in occupations in which the danger is always imminent, as among lumbermen, navy men and ships' crews.

Any One Can Learn

Twenty-five per cent of all young men and boys more than 12 years of age do not know how to swim. It is taken as an interesting corollary that those who live near cold water cannot swim, whereas those who live near warm water can. The Ojibway Indians, who live north of the Height of Land, where the water never gets warm, as a rule, cannot swim, while the Fiji islanders, who have abundant water sports opportunities in the tropical seas, are the best swimmers in the world. But any one can learn to swim if he puts his mind to it. The principal strokes can even be learned on land and then applied in confidence in the water, best under a trained instructor.

Must First Conquer Fear

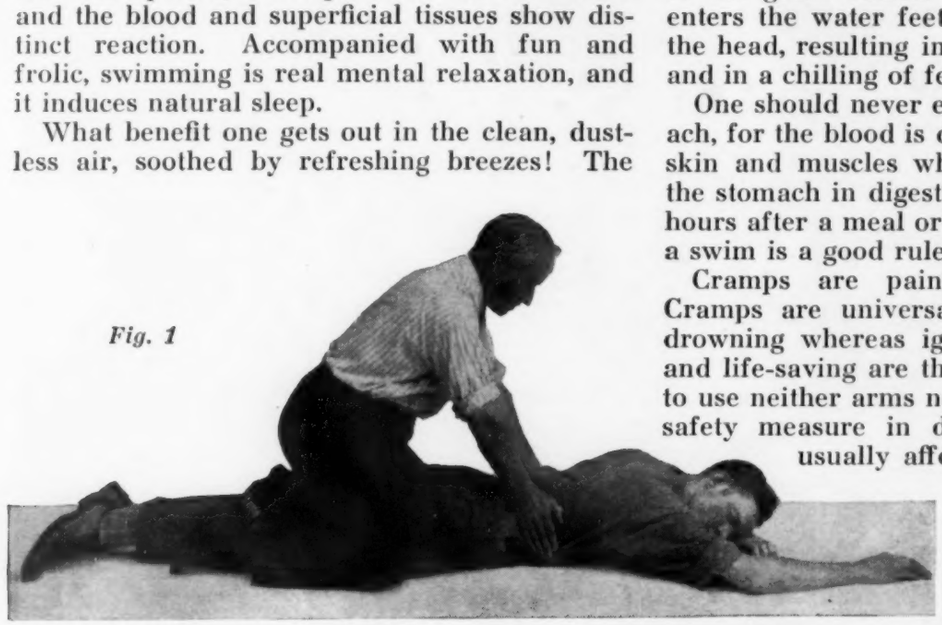
Overcoming fear is the first requisite in swimming and life-saving. A fact that most persons do not realize is that the human body weighs but a pound or so more than the volume of water that it displaces. If a person keeps his wits about him in an emergency his head will safely stay above water.

Vacation objectives are usually chosen to get a respite from summer's heat, and exercise in hot weather is particularly fatiguing. The majority of vacationists are sedentarians, who are under a particular physical strain from inactivity—that tired feeling from too much rest—and the muscles do not burn up the energy taken in by food. For all such, swimming gives improved health accompanied by ease and grace in carriage. The pores of the

skin are opened, waste products are eliminated and the blood and superficial tissues show distinct reaction. Accompanied with fun and frolic, swimming is real mental relaxation, and it induces natural sleep.

What benefit one gets out in the clean, dustless air, soothed by refreshing breezes! The peculiar muscular activity that swimming exacts hits the weakest points in the average sedentarian, his lungs and abdomen, and results in an even development of every muscle in the body without undue strain of any particular one. The novice quickly develops from a weak, breathless, paddling tyro into a strong, graceful swimmer.

Fig. 1



Why It Is Excellent Exercise

The exercise of swimming with the body on a horizontal plane strengthens the pelvic tissues. Swimming, aided by proper dietary measures, reduces fat, and the necessary deep breathing strengthens the lungs, enlarges the thorax and diaphragm and straightens the spine and stooped shoulders.

This excellent form of exercise gives new tone to the skin, and through increased elimination of waste products the dangers of catching cold are lessened.

The splash and slap of the surf acts as a massage, of which Neptune is past master; salt water is ideal for real body benefits, because it is invigorating, its high specific gravity will float the body and make the learning of swimming easier, its higher temperature permits one to stay in longer, and it is a tonic to the respiratory membranes.

Attention to the hygiene of swimming will eliminate many of its hazards. It is well known, or should be, that to enter the water while one is perspiring is too much of a shock to the system. One should wet the head first when undertaking a swim, for this drives the blood to the great vessels of the body. When one enters the water feet first the blood is sent to the head, resulting in a congestion of the brain and in a chilling of feet and trunk.

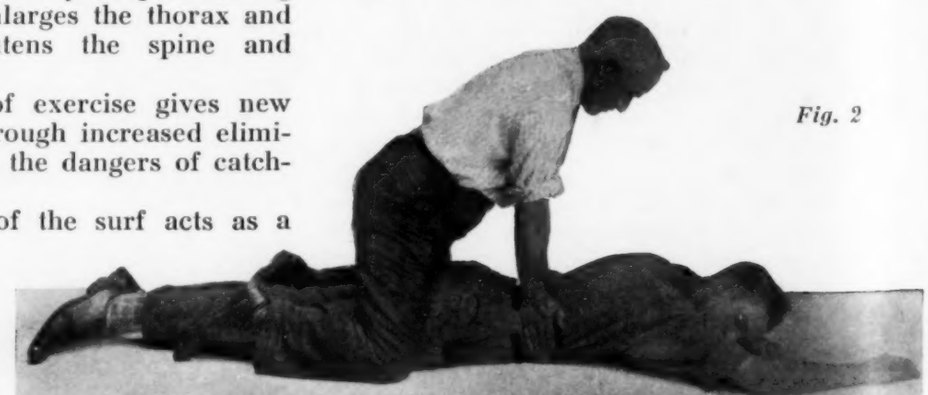
One should never enter water on a full stomach, for the blood is drawn to the vessels of the skin and muscles when it should be assisting the stomach in digestion. Not to bathe for two hours after a meal or to eat for two hours after a swim is a good rule.

Cramps are painful but not dangerous. Cramps are universally given as a cause of drowning whereas ignorance about swimming and life-saving are the usual causes. We need to use neither arms nor legs to float, which is a safety measure in dire emergency. Cramps usually affect but one limb, and the thing to remember when so attacked is not to thrash the water trying to climb up and out for this really puts us down and in.

Cramps usually affect the calf of the leg. A little massage or friction will eliminate the cramp but not the panic; panic is a mental process which proper acquaintance with water craftsmanship will forever banish. If the water is moderately cool, one should stay in but ten or fifteen minutes. It is wise to get right out if the teeth chatter and if the skin turns blue, which mean that the circulation is not reacting properly to the chill.

As a protection to the skin, sun tan is desirable. The actinic rays of the sun are good for us if taken in moderation but we must not acquire this tan too quickly. To prevent sunburn the white skinned bather can protect his body as do Channel and Catalina swimmers by a liberal smearing of the body with cold cream, lanolin or vaseline, although distance swimmers do this largely as a preventive of chill.

Fig. 2



If these precautionary measures are continued for a few days, the natural tan comes. Sun-burned skin may be treated with picric gauze or with baking soda packs.

Of course one will concur with restrictions of public beaches as to bathing suits. The correct type of swimming apparel permits easy action of the limbs, and yet too abbreviated costumes allow too much exposure to the sun with a possibility of burning. Woolen bathing suits should be worn in preference to cotton, for the former provide insulation that tempers the chill of the water while clammy cotton does not.

The first requisite in getting acquainted with the water is to overcome fear; nothing can happen if we keep our wits about us. It is a pernicious practice to throw a child playfully yet thoughtlessly in the water or to push a novice off banks or retaining walls into the depths. The result is certain fright and it may take years for him to overcome a fear complex when he thinks of the water. Let the water win the beginner's confidence, teach him how to float,

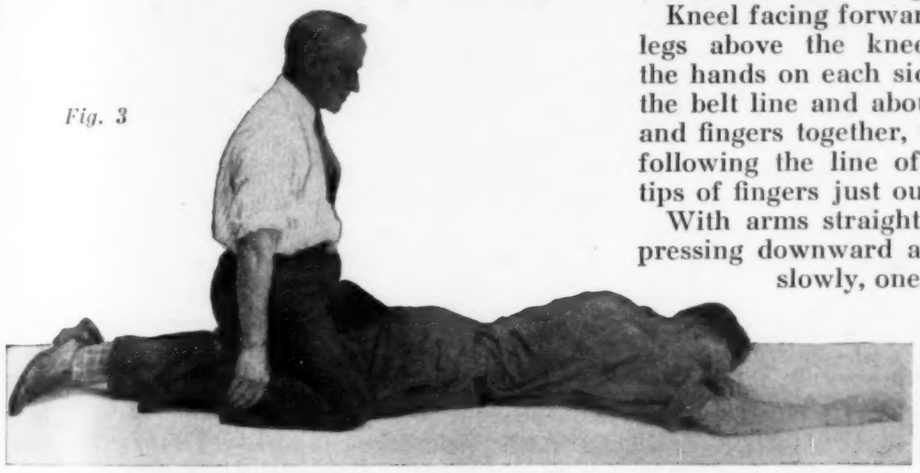


Fig. 3

then some of the simple strokes, ever impressing on him that he is master of his environment. The majority of persons who learn to swim are mistaught, yet swimming is mastered with facility once fear is overcome.

Man is a funny actor when in distress in the water, but his actions are not comedy—they make potent causes of tragedy. When a person gets panicky he generally does everything he can do to drown himself. He tries frantically to lift his body out of the water, he tries to climb out by using the air for a rope, which makes him sink deeper; he shouts for help and gets all of the needed air out of the lungs.

It is interesting to know that one hand out of the water weighs more than a whole body in the water, so we should keep our hands in the water. A man in distress in the water can take a tip from a land animal which, when thrown into the water, sets up a running motion and makes for the shore; all the human being needs to do is to get his body in a horizontal plane and dog paddle to safety. He should concentrate all efforts toward keeping afloat, never straining to grasp the edge of a boat or a wharf which is just out of reach. If he is caught in the ocean undertow, he can avoid catastrophe by giving a push with the foot on the bottom, thus springing up through the current to the top of the water.

Every one should know how to employ artificial respiration to a person apparently drowned. The various steps are shown by Red Cross first aid instructors in the photographs. This prone pressure method, as directed by the American Red Cross, is as follows:

When the patient is removed from the water, get to work at once with your hands. If possible, send for a physician, but meanwhile get to work yourself.

Lay the patient on his stomach. Extend one arm directly over his head. Bend the other arm at the elbow, and rest the patient's cheek on his hand, to keep the nose and mouth off the ground and free for breathing.

Kneel facing forward, straddling the patient's legs above the knees. Place the palms of the hands on each side of his back, just above the belt line and about 4 inches apart, thumbs and fingers together, the little fingers over and following the line of the lowest ribs and the tips of fingers just out of sight (fig. 1).

With arms straight, lean gradually forward, pressing downward and forward and counting slowly, one, two, three (fig. 2). Snap your hands sideways off the patient's back. Swing your body back, counting slowly, four, five (fig. 3). Rest. Straighten the arms and repeat the pressure.

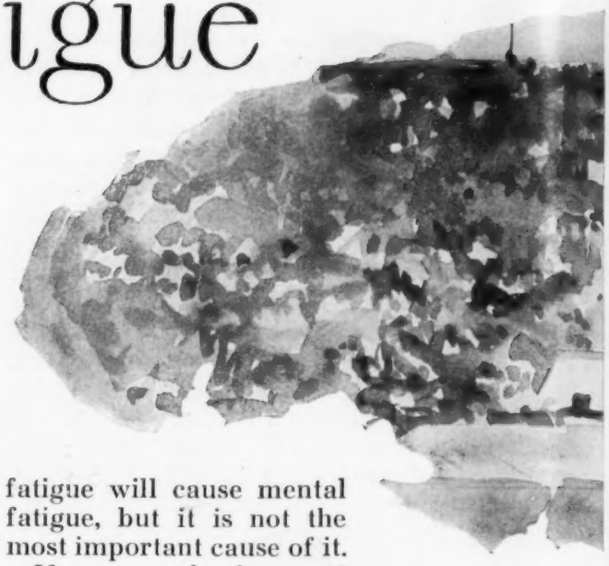
To assist in timing the three movements of straight arm pressure, quick release and swing back (about 12 per minute) repeat during the period of pressure, "out goes the bad air"; snap off your hands and repeat, during the period of release, "In comes the good." Keep working steadily until breathing begins and continues naturally. Unless a physician takes charge, remove the patient, well covered, on a stretcher to a hospital or to his home.

When helpers arrive put them to work; send for a physician; clean the patient's mouth of obstructions; stimulate reflexes; loosen tight clothing; rub the legs and the body toward the heart; supply clothing and heated articles to maintain heat, and have them relieve the operator when he is tired. Place aromatic spirit of ammonia near the patient's nose at frequent intervals.

When the patient begins to breathe naturally once more and is able to swallow, give him a teaspoonful of aromatic spirit of ammonia in half a glass of water or some hot water, coffee or tea.

Mental Fatigue

By
Lauren H. Smith



MENTAL fatigue can be loosely defined as a "tired mind." The mind controls us in various ways, but mainly in our feeling, in our thinking and in our acting. When these get into disorder (although not diseased), we have that tired feeling, or mental fatigue.

Of course physical, or bodily, fatigue is closely linked with mental fatigue, and it is hard to draw the line between them. Mental fatigue can "knock us out" physically or can make us feel as if we were physically ill, even though there is nothing wrong with our body. All of us experience it, in everyday life and work, and it cuts down our efficiency and spoils our happiness. Some are born tired, others attain it, and others have tiredness thrust upon them by a nervous and emotional civilization. Physical fatigue will cause mental fatigue, but it is not the most important cause of it.

If our work does not have a pause all day or if it is monotonous, we become worn out more quickly than if our occupation is interesting. The factory worker has a tired mind early on the job; his production falls off and accidents occur, if his job is not changeable or interesting. When a student takes an examination, he often becomes exhausted, although little physical energy is used. This is because the emotion of fear is attached to the work. A stock broker, hardly having sufficient exercise during the day, may be "all in" at night, because of his load of worry over the fall in the market. Depressing emotions of all sorts are costly activities, and we must gain a knowledge into our own adjustment to the world about us and to the people in it.

The power of emotion can hardly be measured but it seems unlimited. A football team, whipped at the end of the first half, shows complete fatigue. But after a stimulating talk from the coach, the fatigue disappears, even though the boys have had little physical rest. After any sort of a hard day, we may feel incapable of further effort. But if the news came that Lindbergh would be in town to shake hands with everybody, how quickly we would dash down to be the first in line.

Some may wish to know what the signs of mental fatigue are. The signs depend upon the person and the way in which he reacts. Mild symptoms would be irritability, restlessness, loss of interest, headache, inattentiveness, inefficiency, and a tired feeling. If the condition is not relieved or corrected, more severe signs may follow, such as inability to fix the attention, insomnia and an inability to concentrate and solve problems. This may start one to worrying, even to the extent that a fear of mental disease

Six Good Rules

1. When we work, let us keep our interest in it and make it pleasurable.

2. When we play, let us enter into it for all it is worth without regard for anything else.

3. When we rest and sleep, let us turn the mind and body loose and let them do what they will. Learn to rest the mind by leaving the mind alone.

4. When we think, let us make a decision and carry it out. If we decide incorrectly, it can be reconsidered later.

5. When we are very tired, let us not permit a temporary or extreme emotional reaction to drive us into an act that will have permanent results.

6. We must keep our attention on one thing at a time. In the end, skill counts more than hurry in saving energy.

A football team, whipped at the end of the first half, shows complete fatigue. But after a stimulating talk from the coach the fatigue disappears and the squad trots back on the field ready to put new energy into the struggle.

may follow. The attention may become fixed on a neck pain, a headache or a rapid heart. In other words, purely local symptoms may become the natural expressions of an emotionally irritated and exhausted nervous system.

Mental fatigue is Nature's sign for us to watch out. If this disorder is present, we want to eliminate it, and then use preventive measures to keep it from recurring. The treatment (or elimination) and the prevention of mental fatigue are based on the same principles. The average person's life is made up of eight hours' work, eight hours' sleep and eight hours' play. The wisely planned day is the one in which work, rest and play are proportioned. Work is healthful, but it should not have depressing, wearisome, monotonous associations. The working conditions and the working man should have a proper adjustment to each other. Then the mental reactions of the workers will be happier and healthier, and trouble, inefficiency, accidents and discontent will be reduced. Pauses or changes in monotonous work will serve to cut down boredom and monotony. Pleasant interests associated with the work must be stimulated to serve the same end. Rest periods may be established, not for rest, but for active relaxation in diversions and recreations.

A mental interruption is more important than the muscular relaxation, as it interrupts morbid preoccupation. If we cannot be happy with our work, it is drudgery, and not work, and should be changed. It does not matter so much what we do, but how we do it. This is true also in playing or in resting. We can play and rest even while we are eating, reading, thinking or doing anything for a good time.

Our play must do us good by giving relaxation, or its benefit is lost. If we use a muscle without resting it, it will become weaker; if it is never used, it loses its strength; if we exercise it and relax it, it gains in both use and strength. The same principles are true in the use of our minds. Our attention must be on our recreation when we play, not on some worry or problem, or its value is lost.

Our present American life, with its high-powered speed in work is exciting and progressive, but we try to cram too much excitement into our play also. Then it becomes work, not relaxation. Evening used to fall with a hush, and tired men came home to rest in contentment. Evening now falls like a ton of bricks. If the house is quiet before midnight, the evening is considered a failure. Are we going to give ourselves play, or is it to be frenzy? In order properly to gain play and rest, we must use our time-savers to get ourselves more peaceful leisure rather than more excitement.

Not many of us like to follow rules, such as the six given with this article. But if a constant and sincere effort is made in this direction, the practice of this method will soon become a habit. By using such a habit we can enjoy the fulness of a wholesome, happy life.

Hunger

By Anton

WHETHER we use the word hunger in its widest or most limited sense, it describes one of the most common and most important experiences of living organisms. Hunger pangs have been felt by every individual of the human race and have unquestionably determined many of the actions of their lives. Whether other animals besides human beings feel hunger pangs is still a matter of conjecture, but, if we employ the word hunger in its quite legitimate sense as the total of conditions determining the ingestion of food, we shall not exaggerate in saying that hunger is the most potent single influence in life. At times the sex urge is more of a drive to activity, but the sex stimulus is dormant in childhood and fails with advance in years, while hunger is potent throughout life.

Despite the commonness of the hunger sensation (to return to the more limited definition of the word), our knowledge of its real nature is far from final. It is not even easy to describe our subjective experience of it. If we call it emptiness or hollowness, we are not really describing what we feel. Instead we are expressing our knowledge that our stomach is empty of food when we feel that uncomfortable sensation in our midregion. The hunger sensation can be correctly described as painful epigastric tension and pressure, but this, too, is unsatisfactory.

Hunger Occurs in Sharply Defined Periods

A characteristic element in the hunger complex is its intermittency, its occurrence in sharply defined periods. This is true even though the stomach is continuously empty and the physical activity of the individual is uninterrupted. It seems to hold also for other mammals and for birds. In the lower animals, to judge by the motion of the empty stomach, it is nearly continuous.

Although in normal persons the hunger sensation must become exceptionally strong to be markedly painful, the epigastric sensation of varying degrees of pain is the indispensable subjective element. Frequently, however, there is a feeling of general lassitude or weakness. Sometimes headache, nausea, nervous irritability, restlessness, and even fainting may appear as a part of the hunger complex. Strictly speaking, a certain degree of nervous excitability is a necessary effect of hunger of even moderate intensity, but in normal persons with stable nervous organizations, strong hunger is seldom accompanied by any of these obvious manifestations of nervousness. In some individuals, on the other hand, the accessory phenomena may be so marked as to crowd out of consciousness the central factor of hunger, the gastric hunger pangs.

What Causes Hunger Sensation?

When we feel hungry, why do we eat? The obvious reply is that we know that eating will relieve us of the pangs. But how did we learn? A new-born infant cannot know what effect the ingestion of food will have on the hunger sensation, because he has never had food in his stomach. What induces the new-born animal to take food? Is it a matter of inherited reflexes (instinct)? The feeding reflexes are present at birth, and so are the defensive ones which reject unpalatable and injurious substances. We have seen that hunger increases excitability. Hunger then probably causes the infant to put more things into his mouth, to be either swallowed or rejected. Palatable materials in the mouth and any materials in the stomach stop the hunger pangs, and the infant animal learns by the trial and error method that by eating discomfort is changed to comfort.

The exact cause of the hunger sensation is still a matter of dispute, although, to my mind,

and Thirst

Julius Carlson

the theory of peripheral origin has been conclusively proved but not completely worked out. The peripheral theory holds that the hunger sensation is inaugurated in sensory nerve endings, mainly in the upper part of the digestive tract (stomach, lower esophagus and small intestines). Some investigators hold that the origin of hunger is in a hypothetical hunger center of the brain, which is stimulated by food deficiencies in the blood or brain tissues. There is experimental evidence that hunger may, in fact often does, begin even before the stomach is completely empty and long before there could be any food deficiency in the blood or tissue. It has further been shown by experiment that hunger pangs coincide almost identically, both in time and intensity, with certain strong rhythmic contractions of the stomach, which begin as the stomach is emptying and continue in intermittent groups until inhibited by the ingestion of some material or by some abnormal condition, such as strong emotion or the action of drugs. These contractions have been termed hunger contractions. I regard as conclusive proof that hunger pangs are initiated by these contractions (through some sensory mechanism which has not yet been determined) the fact that an artificially stimulated hunger contraction in an otherwise quiescent stomach will invariably give rise to a hunger pang.

Recording Hunger Contractions

The existence of intermittent hunger contractions, as well as the several other types of movements of the stomach, has been ascertained by several methods of objective observation on the stomachs of normal and abnormal man and animals. The stomach may be observed either directly through a fistula, by means of the x-ray and barium in the stomach, or with the aid of a balloon, which, when inflated in the stomach and connected by a rubber tube to a recording instrument, will yield a continuous record of its movements.

In the normal human being a single hunger contraction endures on an average of thirty seconds. They come in periods of from thirty to forty-five minutes, which are separated by periods of repose from thirty to one hundred and fifty minutes long. The individual contractions in each period are separated by periods of quiescence at first but are practically continuous at the end. In infants the periods of quiescence are shorter, gradually increasing to reach their maximum in senile old age. This is what we would expect, knowing that body metabolism (rate of food combustion) decreases gradually from youth to old age. The stomach muscles do not seem to share completely this decline, since starvation, even in old age, will give rise to strong contractions.

Emotional States Inhibit Contractions

The stomach is supplied with various sensory and motor nerves from the central nervous system. The function of these nerves seems to be, in general, one of modification, similar to that of the nerves to the heart in the regulation of the heart rhythm. Even when all the central nerve connections are severed, the stomach exhibits typical hunger contractions. In sleep, hunger contractions are more vigorous and regular than in the waking state. During sleep there is a general decrease in activity of the central nervous system, evidenced by decreased activity in all the other neuromuscular mechanisms, such as skeletal muscles, blood vessels and urinary bladder. One might expect to find the same condition in the empty stomach. The phenomena of increased activity indicates that the tonus mechanism of the stomach occupies a unique place in the organism.

Emotional states of the higher nerve centers, such as anger, fear and joy, inhibit hunger

contractions. Intellectual states, such as attention, reading and reasoning, have no distinct effect on the course of the hunger period. Contrary to popular belief, the sight or smell of food does not intensify hunger contractions; if there is any effect it is in the other direction. In this case the hunger pangs are probably reinforced through some central mechanism. The basis for the view that hunger "cravings" can be changed at will is probably to be found in the fact that mild hunger contractions do not enter consciousness if the attention of the individual is diverted in any way. The attention to hunger is usually aroused, consciously or unconsciously, about the time the individual is accustomed to eat. Therefore, if he changes that time, he can to a certain extent change his experience of hunger pangs.

One of the chemical factors in the blood that has been shown to influence gastric hunger contractions and the conscious hunger sensations is the sugar. When the blood sugar is markedly decreased hunger is increased, and vice versa. This is probably one of the reasons we can so quickly appease hunger with candies or sugar, as this type of food enters the blood quickly.

Hunger is increased in such diseases as diabetes. It is decreased in fevers and in most disorders of the digestive system. Hunger is not directly influenced or increased by tonics. Appetite seems to be merely the memory of past experience (sight, taste, smell) with food. Appetite is therefore a pleasant subjective process or sensation, while hunger is built into the very framework of the animal machine and is not essentially modified by the experiences of the individual, except as this induces strong emotional states.

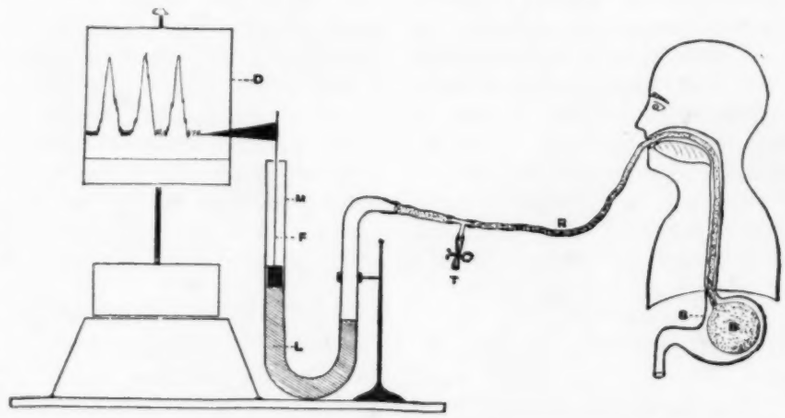


Diagram showing the balloon method of recording the hunger contractions of the empty stomach of normal persons. B, rubber balloon in stomach; D, kymograph; F, cork float with recording flag; M, manometer; L, manometer fluid; T, side tube for inflation of stomach balloon.

The hunger pangs, due to the strong contractions of the empty stomach, continue throughout fasting almost to death. The view that hunger disappears after a few days' fasting is an error. But disturbances in our conscious life can overshadow our hunger feeling or even change it to nausea. Thus we see that the working of the hunger mechanism requires a normal stomach with its sensory nerves, and also a normal or nearly normal brain.

Thirst

MAN is about 70 per cent water, and water is a more pressing or continuous necessity than is food, not only for health and happiness but for the very continuance of life. A healthy human adult can survive without food, with a decreasing physical efficiency but without serious discomfort, for from forty to sixty days. If the same man is completely deprived of water he becomes very uncomfortable after two or three days, feverish and delirious in from four to seven days, and usually dies in from eight to twelve days.

The speed and intensity of appearance of these water deficiency symptoms depend in part on the temperature and the humidity of the air, since man loses much water from the surface of the skin (through sweating and insensible perspiration) and in the expired air. It is not surprising that a man or an animal survives longer if no food, especially no dry food, is taken during the water deprivation, since the elimination of the wastes from the food proteins by the kidneys calls for water. If the body energy is supplied by the body fats and body proteins some water is actually manufactured in this process, and this water helps in the necessary kidney activity.

Thirst is usually experienced as an uncomfortable sensation of burning and dryness in the throat and mouth. When thirst becomes more intense, the feeling of tension and discomfort extends to the whole body. We become very restless. We feel feverish and dry. The sensation of thirst can be appeased not only by taking water by mouth but also by putting water directly into the stomach or the large bowel through a tube, or directly into the blood. The part of the thirst sensation that is referred to the throat and mouth can be temporarily decreased merely by moistening the lips and the mouth, using so

little water for this purpose that little of it actually reaches the blood.

For the understanding of the way or ways by which water deprivation induces thirst, there is not as much good experimental work to guide us as there is on the nature of hunger. Three main theories of the origin of thirst have been advanced. All these start with the fact that long deprivation of water leads to concentration of the blood. This is a demonstrated fact. When the blood becomes thicker, some of the properties of the blood (the osmotic pressure) are changed. The blood plasma becomes a stronger brine, this brine draws some water from the living cells, and this, in turn, induces changes in the cells and tissues. Some of these changes are decreased secretion of saliva, gastric juice, sweat, tears and urine. This seems like an unconscious attempt on the part of the body to conserve its stock of water.

Theories Concerning Thirst

One theory of thirst assumes that thirst arises from stimulation of sensory nerve endings in the mouth and throat by the drying due to the decreased secretion of saliva. Another theory assumes that the concentrated blood (stronger brine) stimulates some region in the brain (a hypothetical thirst center) and many sensory nerves directly. This theory has difficulty in explaining the usual reference of the common thirst sensation to the mouth and throat. A third theory proposes that the thirst sensation is called forth by a spasm of the gullet, induced by the concentrated blood acting either directly on the muscles of the gullet or on the region at the base of the brain that sends motor nerve fibers to the gullet muscles. One worker has reported experiments indicating greater tonus, or spasm, of the gullet during thirst, but even if this is true, it may be one of the many effects of thirst rather than the necessary link in the arousing of the thirst sensation.

Thirst Differs from Every Other Urge

Thirst differs from every other conscious sensation or urge. No matter how started, there is very likely some particular region in the brain in which the conscious processes of thirst are, so to speak, focused. This may be called a thirst center in the brain. But there is no clear evidence that this hypothetical center is particularly sensitive to blood concentration.

The theory that thirst arises from drying of the mouth from failure of salivation appears at present to have many facts in its support. Thus drugs, such as atropine, that stop the flow of saliva are said to induce thirst even without causing concentration of the blood. But it is my experience that the feeling of dryness in the mouth and throat after taking atropine or after prolonged talking is not true thirst. I also feel that true thirst can be experienced (as after eating salt or very salty food) long before salivation is decreased or before the mouth and throat become dry. This thirst is a salty, tickling, burning sensation in the throat and gullet. It is mildly unpleasant but is not accompanied by any feeling of dryness in the mouth or throat. The feeling of dryness or stickiness in the mouth seems to come much later.

Excessive Thirst

The fever induced by water deprivation is probably due in part to failure of sweating and insensible perspiration, since much heat is carried away from the body by these means. But it is also known that blood concentration tends for a time to increase the excitability of nerve fibers and brain cells. Since there appears to be a special region in the brain, the thalamus, intimately concerned with the regulation of the body temperature, one must consider the possibility of the concentrated blood stimulating this region directly.

Excessive thirst is induced by any condition that causes excessive loss of water by way of the kidneys (diabetes mellitus and diabetes insipidus), by way of the sweat glands, or by way of the alimentary tract (vomiting and diarrhea). As in the case of hunger, the brain must be normal or nearly normal to respond by normal thirst sensation to the state of blood concentration.

The "Thirst" Appetite

Pure or distilled water is tasteless. Hence there can be little or no appetite factor in connection with pure water and thirst. But since most waters used for drinking purposes are not pure in the sense of being distilled, we can and do develop some appetite-like memory processes in connection with impure waters, mineral waters and flavored drinks. People say that distilled water tastes flat.

Man has not yet created a name for the thirst appetite. We merely say we like this or that mineral water or flavored drink. The "thirst appetite" seems nevertheless to be a real factor, as it is apparent that many people imbibe so-called soft drinks without being thirsty, or drink "one half of one per cent" beer without either thirst or hope being present. The craving for alcoholic drinks in persons habituated to alcohol is not to be confused with the true thirst for water. The mechanisms of these two urges are different.

Man is, indeed, a "water baby." He is literally "wet." Nature has provided him with inherited mechanisms compelling him to secure his quota of the water of life, the plain H_2O. Nothing can take the place of this beverage. Modern biologic research is beginning to reveal the physics and chemistry of these mechanisms.

Tonsils—IN *and* OUT

By Emanuel Krimsky

Chaliapin in Mefistofélé. The famous Russian basso has a large, roomy throat cavity and large vocal cords.

1. What is a tonsil?

A tonsil is a specialized form of fleshy tissue, almond shaped. It is situated in the throat and is known as a gland. With the exception of bone and cartilage, all tissues of the body are fleshy; that is, they are soft. But fleshy tissues from different parts of the body vary in appearance, in toughness on cutting, in the amount of blood they contain, in their duties in the body and in various other ways.

2. What is a gland?

A gland is a special type of fleshy tissue, which is different from other fleshy tissues, such as muscle or fat or tendon, in structure, in its duties in the body and in various other ways. The purpose of a gland is mainly to manufacture or to secrete certain fluids that normally are of benefit to the body. For instance, when a person cries the tears that are manufactured come from a small piece of soft tissue situated beneath the upper eyelid. This tear gland was not built by Nature for the purpose of tear production; this function is incidental. The real and important purpose of the tear gland is to keep the eye moist. In some disease conditions in which this gland fails to act or is destroyed, the eye is dry and appears glazed as in death. On the other hand, too much and constant tearing is irritating to the eyes. The same principle applies in all other glands. It is only when too much or too little secretion or fluid is expelled that they cause disturbances of the body.

Some glands do not secrete fluids but merely absorb or drain material from secreting glands or from poisonous deposits. For instance, when the tonsil, a secreting gland, is diseased, the glands of the neck frequently absorb or drain the poisons from the tonsil and hence become enlarged.

3. What types of glands exist in the body?

Among the glands are the liver, the pancreas, the thyroid, the pituitary and numerous other technically named structures. When these glands act normally, or are of normal size, we forget they exist. For instance, goiter is more than a swelling of the neck. It is an enlargement of the thyroid gland, which normally does not produce visible swelling.

4. Of what use to the body are the tonsils?

Certain structures of the human body have been placed there without benefit to the body. The best example of this is the appendix. One would naturally infer that the tonsil falls in the same class. But this is not usually the case. Surgeons know from experience that in certain persons indiscriminate removal of the tonsils may cause annoying dryness of the throat.

which is apt to remain permanently. From this one may conclude that the tonsil in a good number of cases helps to keep the throat comfortably moist and lubricated.

5. How is the tonsil supported in the throat?

The tonsil is hemmed in, front and back, between walls or pillars which meet in a pivot or angle. The tonsil fills up this angular space. The only part of the tonsil that is not supported is the part that one sees by inspection of the throat.

6. How is the tonsil attached to these pillars?

The tonsil is fortunately so constructed that it is not attached to the rest of the throat as the skin is to the tissues beneath. Its attachment is loose and may be compared to the loose connection between an orange and its covering, the rind. For this reason, proper surgical removal is really a shelling out of the tonsil from its bed, and it is only by a proper shelling out of the tonsil that we can expect a minimum of hemorrhage.

If inflammation repeatedly develops in the throat, this attachment of the tonsil to its shell becomes firmer, and the shelling out process is then likely to become more difficult.

7. What is a diseased tonsil?

A diseased tonsil is one that has been repeatedly inflamed. It is a tonsil that is infected throughout its length and breadth. A tonsil that is attacked by diphtheria is not in the strict sense of the word a diseased tonsil, because antitoxin is effective in combating this type of infection.

8. What causes a tonsil to become diseased?

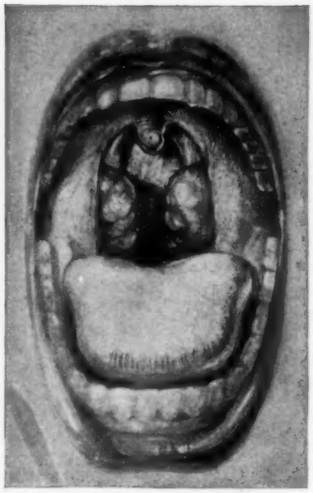
This question should be discussed at length. A logical explanation of this question would demand a consideration of certain factors, such as: (*a*) the causes of colds; (*b*) the effects of colds; (*c*) the nutritional upbringing of the patient in childhood, and (*d*) the effects of diseased teeth.

In general, it may be said that a child is born with tonsils that are not diseased. A child may be born with a diseased heart, with paralysis or with other manifestations of disease, but the birth of an infant with diseased tonsils has never been reported. In fact, during the first few months of life an acute inflammation of the tonsil is practically unknown. So that the extraneous factors after birth, such as colds, rickets, general lymph gland enlargement,

In contrast are seen Chaliapin with his large throat cavity, or resonanting chamber, and Galli Curci with her slender throat. The smaller the throat cavity the higher the voice. Removal of tonsils often lowers the pitch of speaking and singing voice.

poor ventilation and sudden changes of temperature, are contributing causes of diseased tonsils.

The adenoids, which are located above the tonsils, enter into a vicious circle with the tonsils. The adenoids, which drain the infected matter coming through the nose, drop their discharge on the surface of the tonsils, and sooner or later this infection penetrates the tonsil with serious results.



The human throat with tonsils moderately enlarged. (From Sleider.)

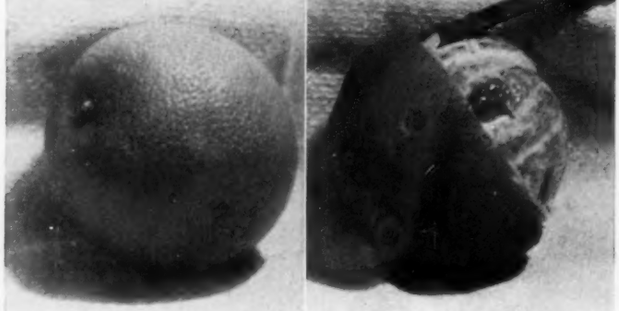
Certain types of delicate children without any known reason develop large glands throughout the body, and, incidentally, the tonsils are infected. These children are really afflicted with an hereditary taint.

9. What are the harmful effects of diseased tonsils?

The most common harmful effects of diseased tonsils are: (*a*) diseases of the heart; (*b*) rheumatic affections of the joints; (*c*) St. Vitus' dance; (*d*) increased susceptibility to contagious diseases, and (*e*) increased susceptibility to kidney trouble.

10. Is there any way of preventing the tonsils from becoming diseased?

We may educate our children in the proper use of a tooth brush for the prevention of pyorrhea, even though a tooth brush will not prevent the teeth from becoming diseased. We may prevent diphtheria by suitable injections.



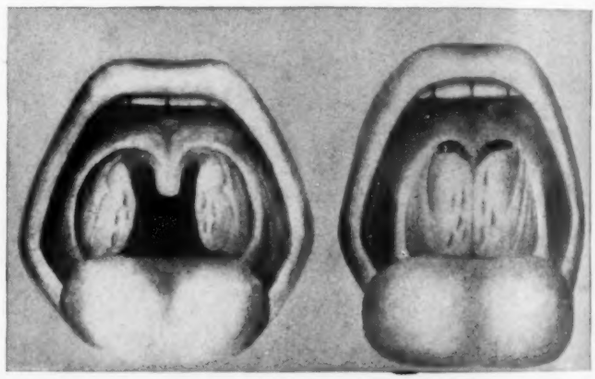
The uncovered portion of the orange is analogous to that portion of the tonsil that projects into the throat. The covered portion corresponds to the loose capsular covering of the tonsil.

But to speak in the same degree of certainty with reference to tonsils is well nigh impossible. The only thing we can say at present is that a healthy body is the best protection against tonsillar infections.

Bottle babies, who in many cases become subjects of rickets, seem more likely than breast-fed babies to suffer from a glandular diathesis, or susceptibility, with concomitant enlargement of the tonsils. A breast-fed baby, although not proof against tonsillar infection, has a better chance of avoiding tonsil trouble later. Moreover, the prevention of colds, the proper attention to infected teeth, the insurance of pure air passing freely through the nose are the best safeguards against tonsil trouble that can be enumerated at the present time.

11. How does a tonsil produce disease in other parts of the body?

The most common way for tonsils to produce disease is for the infection in them to be transmitted by the blood stream to certain organs or



At the left is a drawing illustrating large tonsils; at the right the tonsils are so large as markedly to interfere with swallowing. (From Tilley.)

tissues. Rheumatism does not have its origin in the knee; the infection was carried there from some other part. Once the tonsil becomes diseased, it is always diseased (with but rare exceptions), and the infected matter is therefore constantly produced and shipped to other parts of the body, such as the heart and joints.

In a number of cases, the person is constantly swallowing the pus from the tonsils and is a sufferer from stomach trouble.

12. What are the relations between diseased tonsils and diseased adenoids?

In a child it is common to find the adenoids affected at the same time as the tonsils. When the tonsils are badly diseased, the adenoids are usually diseased also. There are instances in which children have very large and diseased adenoids with little affection of the tonsils and vice versa, but these cases are less common.

In the adult, the story is different. The adenoids have shrunk to such an extent that opera-

tion is rarely employed. It is safe to assume that in the adult diseased tonsils are not accompanied by diseased adenoids, except rarely.

13. What are the relations of teeth to tonsils?

In the child, except for the fact that large adenoids are productive of malformed jaws, no relation is found between bad tonsils and bad teeth.

In the adult, however, when pyorrhea and pus pockets are common, we can conceive of this pus, as it is being swallowed, bathing the surface of the tonsil and producing tonsillar disease. In the early stages, proper attention to the teeth would help to prevent further disturbances of the tonsil.

14. What effect has the presence or absence of tonsils on the quality of the voice?

Voice originates in the vocal cords, two bands that normally vibrate in unison like the strings of a violin. The vocal cords are situated behind what is commonly known as Adam's apple.

Of the violin and the viola, the violin produces a higher-pitched sound because the air box, or resonating chamber beneath the strings, is smaller in the violin.

The child has not the large roomy throat cavity or resonating chamber of a man. Therefore, his voice is higher pitched. The throat cavity, not to mention the vocal cords or strings, is larger in a basso singer than in a soprano; hence the lower pitched voice of the basso. When tonsils are enlarged, they diminish the size of this air box and produce a higher voice.

Another demonstration of this fact is as follows: Fill a pitcher of water gradually. As the water is pouring into this container, a musical sound like the notes of a musical scale is elicited; and when the water reaches the top of the pitcher, the note is highest. When the pitcher is empty of water, it has a large resonating chamber; as the water gradually fills this container, or air box, the pitch becomes higher.

(To be continued.)

PLIGHTS OF THE BATH

BATHING, one of the most commendable of practices, is not without its dangers. So many accidents occur in the bathtub that the wise man will hang an "Occupied" sign on the outside of the bathroom door rather than lock himself in, thus cutting off or delaying outside aid.

Dr. Guy Hinsdale, writing in *The Journal* of the American Medical Association, lists sixteen fairly frequent causes of accidents that may occur to persons in their own tubs, in sea bathing and in baths given for medical purposes. They are as follows:

1. Falls on slippery places in the bathroom; falls on getting in or out of the tub or cabinet.
2. Faintness, or vertigo, in getting in or out of the tub or cabinet.
3. Epileptic convulsions.
4. Syncope, or fainting, from heart disease.
5. Apoplexy.
6. Drowning in the tub.
7. Scalding in the tub.
8. Scalding in the douche; scalding in mistake for cold shower.
9. Cabinet burn.
10. Deaths in the Turkish bath.
11. Dangers of the continuous bath.
12. Death from electrical shock while in the bath or bathroom.
13. Death from escaping gas in the bathroom.
14. Drowning in surf, rivers or lakes.
15. Winter bathing in northern waters; cold plunges.
16. Misuse of accessories, such as the hot water bag.

Faintness, or vertigo, is more liable to occur in hot water bathing than when cold water is being used. Especially is this the case when weakened persons take a hot bath too soon after a meal or when fatigued.

Persons with serious valvular heart disease should be especially careful about using any bathing procedure involving extremes of heat and cold. Their hearts do not have the power of adjustment to the sudden change.

Apoplexy sometimes occurs in the bath as it might at the dinner table or elsewhere. Those of the so-called apoplectic habit should not be left unguarded while taking baths. This applies also to the obese, who from lack of proper exercise have a fatty or degenerated heart.

Scalding in the tub, while certainly avoidable, is not uncommon. A bather may carelessly enter the tub, without testing the temperature of the water and receive such extensive scalding as to cause serious injury or death.

Electrical shocks while in the tub or bathroom are not uncommon and are wholly preventable. A man is in much greater danger from electrical shock when taking a bath near any electrical fixture than under ordinary circumstances, because the surface of the body when wet offers much less resistance to the current than when dry. Persons have been killed, when bathing, by currents that would scarcely have affected them outside the bath.

It is dangerous to touch an electric bulb, socket, or even a push-button, or an electrical heater, while standing in the bathtub or in contact with it. Of course, no bulbs, sockets or electric wires or apparatus should ever be installed within reach of a bather.

Winter bathing in northern waters and cold plunges into lake or sea are dangerous practices.

MISERY CLINIC

Where Those with Unruly Nerves May Find Help and Understanding

By Joseph Jastrow

IF YOU should put a shingle on your door with just two words on it, Misery Clinic, what would happen? First would come a trickling stream of curious visitors in more or less trouble, wanting to know what hope or help might be found there. Then, as the news spread that it was a place in which a person could tell his tale of woe, of mental difficulty and emotional distress, and get sympathetic understanding and sane advice, the stream would become a steady flow. Presently there would be a crowded line and a waiting list longer than a superman could handle in a day's work. Your shingle might be on Main Street or on the Avenue with the same result; and most of your cases would come because of the misery of "nerves."

We call the condition "nerves" in order to realize that behavior is a matter of the nervous equipment, and misbehavior likewise; but it is a condition of fear and despair, of inhibitions and disabilities, of obsessions and tortures, of haunting dreads and brooding depressions. A procession of handicapped, disqualified and disorganized personalities, the great army of the mentally unfit, drag themselves through their daily rounds to the agonized movement of the Misery March.

For all this pitiable army, many of them your neighbors and mine, we, the responsible keepers of our brothers and sisters, have made provision so scant as to be almost negligible. Until we organize clinics for these slighter but disqualifying mental ills as we have for ills of the body, we shall not have met our humane obligations. There are as many who need help to keep mentally fit and to regain their fitness as there are those who need relief to bring them back to bodily health.

A daily article in a group of papers scattered through our vast continent brings me many more letters than I can possibly use to point the moral and adorn the tale of mental fitness. Without intending it, as a by-product of my main purpose, I have been conducting a misery clinic by correspondence; and occasionally the tales told by letter are confirmed by interview.

To understand the situation, one must get the personal touch of a human story, often told reluctantly in the spirit of a confessional. I select a few out of many of just one class of cases, a sample to give a moving picture of the

souls in the distress of "nerves." These letters should be read as human documents, as evidence of the misery that the human mind is heir to. Here is the first tale of "Nerves That Fail";

Case 1.—I am writing you as to a remedy for my mental condition. I am a young man, 23 years of age. About four years ago I was in a general run-down condition and I went away for two weeks to regain my health. At the end of the two weeks I was looking and feeling like myself again, but I brought back with me a suspicion that I paid the owners of the farmhouse in which I lived more money than was really due them; still I am sure, by all sorts of figuring, that I did not. I have no particular sum in mind, only that it is a large amount. I let this prey so on my mind that I became irritable and cross and wanted to be alone to brood over the idea. I would sit at the table to eat, and have this worry on my mind and, at the least little annoyance, I would jump up in an uproar. In a few months I developed nervous indigestion and general nervousness.

This set me to thinking of how to cure my case of "nerves," and instead of doing 100 per cent thinking on this one idea I directed part thinking to one problem and part to the other. I was under the impression that if I got rid of this one case of "nerves," I would not let anything bother me again. This is the attitude I have had for four years.

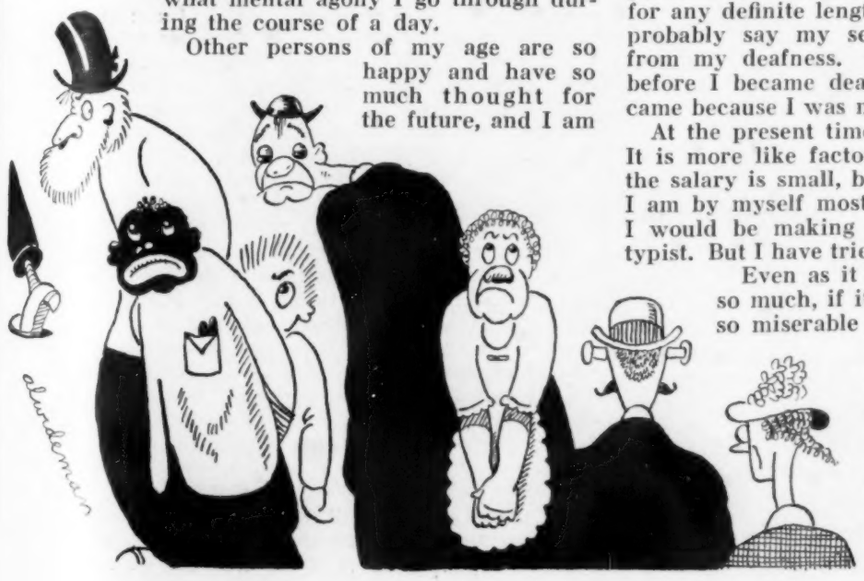
I went to the —— Institute and the doctors did not seem to find anything the matter with me physically. I also joined the Y. M. C. A. to exercise and to get myself into different habits of thought.

My physical condition seems to be quite a little better now than it was; instead of being bothered throughout the whole day, I may be bothered for only an hour or so. You would think I would be thankful that I feel better, but, no, that mental torture keeps nagging me right along. The future seems black to me. After getting through with a meal I may have no nervous distress whatsoever, but still I worry about whether the food I ate was all right. My mind is in a turmoil. Everything bothers me. At times I imagine I am insane. I think of doing away with myself. The queerest part of it all is that I know I am all wrong in whatever I am thinking about, but still I can't get it out of my mind.

I have tried all kinds of suggestions but have failed. I would look at other people's misfortunes to try to cheer myself, but of no avail. My mother says it is up to me to forget it, to stop thinking; if I could forget it all, naturally I would be cured. You have no idea what mental agony I go through during the course of a day.

Other persons of my age are so happy and have so much thought for the future, and I am downcast, melancholy, blue, and fearful of the future. I would go out and try to enjoy myself socially but the minute I try to be happy that thought of overpaying the owner four years ago comes right back.

I am sure that 75 per cent of my condition is mental. Four years ago before all this came upon me, I was happy and ambitious and my future seemed rosy. I certainly envy those days. I imagine I shall never be the same any more. Professor Jastrow, I wish you could help me out of this mental rut. In fact, I am writing you as my last resort. You understand cases like mine; the average person who is not afflicted with nerves or mental agony tells me to laugh it off. You will certainly save my life if you can suggest anything that will cure. I shall appreciate it from the bottom of my heart.



Men and women alike are subject to the havoc of unruly nerves. The second story carries even more distressing results than the first.

Case 2.—Perhaps if I tell you my troubles by letter, you can give me some advice that will help.

When I was 14 years old, in my second year in high school, another girl and I got into the habit of holding our breaths just to be funny. We said, wouldn't it be funny if people always did that. As a result of that foolishness, I got into a habit that I have never really got rid of.

In the same year, I left high school and stayed at home for three years. My father was a gardener on a private estate, four miles from the nearest village, so I never mixed in with people at all. When I was between 17 and 18, the folks sent me to a business school in New York City. I believe I forgot to tell you that since as far back as I can remember, I have been extremely timid, sensitive and self-conscious.

It took nine months to finish my course, and when I finally finished, I dreaded to look for a position. And when I got a position no employer would keep me. I was in one job for a month, in the next two months, the next one month again, and so on. And all because I was so extremely self-conscious and sensitive that I could not keep my mind on my work.

When I was 19 years old, my hearing started to bother me. I couldn't hear what people said. I was advised to give up stenography and do straight typing, which I did. But I had the same trouble about holding a position. Although I have been to about six or seven ear doctors, including clinics, I have not been helped. My hearing is now about 65 per cent gone. I am twenty-four years old, and for the last three years I have not been able to hold a steady position for any definite length of time. I know that you will probably say my sensitive self-consciousness comes from my deafness. But I felt that way three years before I became deaf. In fact, I think the affliction came because I was never able to relax or concentrate.

At the present time I am working in a small town. It is more like factory work than anything else, and the salary is small, but the reason I like it is because I am by myself most of the time. If I were normal, I would be making at least $22 a week as straight typist. But I have tried for three years without success.

Even as it is, I don't think I would mind it so much, if it were not for the fact that I feel so miserable while in the presence of others. I can't even walk along the street and hold my head up. Regardless of whether there are two people or fifty, it seems as if their eyes were boring through me. As a result, people stare at me and I have a strained, afraid look in my own eyes. I can't act natural. If I could, I know they

wouldn't look at me any more than at any one else. But that is where the habit of school days comes in. I can't breathe naturally or relax.

Because of this feeling, I stay as far away from people as I can. In the family there are my father and mother, my two brothers and a boarder. (Please excuse my poor English and lack of neatness.) Yet I never can sit down at the table for meals, even in my home, so perhaps you have some idea as to how far things have gone.

When we have company, I stay by myself and read. I hope you won't get the impression that I have not tried to get over this foolishness. I have tried so hard. But instead of getting better, it seems to be getting worse. I live in a small town where every one knows every one else's business and they all know just what kind I am, which doesn't help any.

I have often been told I am pretty, but it does not make me feel any more cheerful.

If I were older and felt like this it would not seem so bad, but now I believe I am at the best and happiest time of my life and I can't go forward. I seem to be going backward instead. I feel so discouraged that I don't know what to do. People do not understand; they think it is a great joke. I don't suppose you get many letters like this, but if you only knew how I want advice from some one who understands. I have told you all the details (much as I hated to), because I think you can better know how I really feel. Please let me hear from you in the near future.

Comment is difficult. The vital question is less what one can say than what one can do; yet understanding must guide treatment. A body of highly selected men and women must adopt the healing of nerve-sick souls as their profession; they must be trained medically, psychologically, socially, to establish Misery Clinics wherever needed. The demand for the new profession is insistent; communities and private philanthropy have a noble part to play in this neurologic ministration of the future.

In case No. 1, the director of the Misery Clinic would begin by getting the intimate story of that young man's life, his circumstances, his childhood trials, his adolescent struggles, what manner of nervous symptoms he showed in childhood; whether there were any disturbing shocks or crises, whether there were difficulties in his love life.

Every case is individual, and analysis takes time, patience, tact, sympathy. A physician could set a dozen fractures in the time needed to determine the source of the crippling of one mind. Then gradually he must lead the floundering wanderer out of the morass to solid ground. Salvaging souls is a slow and delicate art. The adviser may insist with authority that all these symptoms are unreal, but he must clinch his assurance with a program and must follow the case through slumps and backslidings until the patient can enter the promised land of normality.

There is a bodily regimen as well as a mental one to establish, for fatigue is often the serious disturber of the mental peace. There is a readjustment to bring about, an outlet to be found for entangling impulses, the power to ignore to be cultivated, the will to health to be maintained. Nothing is easy or simple in the land of nerves, when the going has become complicated through the complexities of an ingrowing mind. All such cases follow patterns, though with a variable design, and the first case belongs to the neurasthenic order. Go through a dozen such cases, and each illuminates the others, sometimes with a ray of hope or a flash of insight. There is no more exacting profession than that of director of a Misery Clinic.

Case 2 belongs to the other great division of neurotica, the land of nerve misery, and is called hysteria. As is commonly the case, there is along with a true infirmity a puzzling web of mental complications. The deafness might be, but in this case is not, imposed by the hysterical misfunctioning; but it is thereby aggravated. There is more disqualification than usual, and less impulsiveness; instead of outbreaks there are repressions. The fetters are many, and the need of aid is vital. Yet the circumstances of this girl make it impossible to minister to her according to her needs. For her a clinic must provide a slow, long-range rehabilitation.

Now read Case 3 to obtain an additional picture; and Case 4 to the same end.

Case 3.—I have about decided that I should consult a psychiatrist, but would like first to tell you briefly of my troubles and ask if you think such a course advisable.

I am an engineer, 25 years old, having degrees from two engineering colleges, and have been working in New York for about three years. My home is in the South.

During the last two or three years, I have gradually developed a tendency to magnify the most commonplace actions into big difficulties. Making a telephone call, getting a hair cut, buying something in a store, carrying on a conversation and other ordinary actions all seem difficult to me.

I have also developed trouble with my speech, and I don't know whether that trouble is the cause or the effect of my magnification of difficulties. Quite often, when I want to say something, I have a feeling I can't. If I force myself to go ahead and try to say it, stammering and stopping results. I am particularly afraid of words beginning with certain letters such as U, W and I. However, any word may at times prove a stumbling block. I also seem to have trouble in finding the right word and in properly framing my thoughts into sentences. If I rehearse in my mind the exact way in which I am going to say something, and I seem to have a habit of doing that, I am sure to have trouble when I try to say it. At times, I get my words transposed; that is, I think one word and say another.

I have allowed myself to become so worried by these apparent difficulties that I get little pleasure or satisfaction out of anything I do. I also feel that I am not making the professional success of which I am capable. I made a good record in college and graduated at the head of my class.

I find it hard to concentrate, because I am continually thinking of difficulties ahead. Very often I do not pay attention to what people are saying. In reading a newspaper, I skip from one thing to another and have only a hazy idea of things I have read.

My dread of necessary actions ahead often results in a feeling I can best describe as shaky. My legs, arms and head all feel shaky and out of control.

So far as I know, my family is entirely normal with one exception; one of my mother's sisters is insane.

I cannot decide whether I actually have some mental or nervous trouble or whether I have simply allowed myself to be frightened by my fears and imagination.

I should appreciate it if you would tell me what you think the trouble is, and suggest a line of action to remedy it.

Case 4.—I have been much interested in reading your article in the New York *Evening Post,* entitled "Keeping Mentally Fit." I have a daughter who is suffering with neurasthenia and hysteria. We have had her in two sanatoriums and she is getting worse all the time. She is a beautiful girl, 28 years old. She has remained in bed for the last three months. She says she cannot get up but we are sure she has perfect control of her limbs, as she stood upright in bed recently.

She is superstitious and has many oddities, such as refusing to change her nightgown; she will not comb her hair, and if any one touches her shoes she screams terribly.

If you do not bother her she is as sweet and normal as any one could be. The doctors assure me her brain is perfectly normal. If you can help me in this matter I shall be very grateful, as I am almost worn out caring for her.

I could extend the four cases to forty and not exhaust the list or the variety of disqualifications and maladjustments that make the demand for a Misery Clinic. Sometimes the maladjustments make the problem. The circumstances are seriously wrong; it may be the family life, it may be the stress of poverty, it may be a disappointment in love, it may be a life empty of satisfactions. But unless you have a fairy's wand supplemented by a millionaire's bankbook, you can't make over circumstances, not sufficiently. You can remove the worst sources of friction and try to get into the vacant troubled life some new interest.

More fundamental is the making over of the personality, diminishing the sensitiveness, strengthening the defenses, finding compensations, piling up small successes to give courage for bigger gains later, and always the insistence on self-help and the determination to go over the top and fight the enemy to the last ditch.

Central to it all is understanding. You can't help unless you understand. Because it is important for the public to understand, it is well to know the need for misery clinics and the problems of the many who would come to them for support in their struggle with unruly nerves.

Mosquito-Proof Sunroom for the Baby

THIS child's mother knows the value of sunlight and fresh air for babies, yet she also knows that mosquitoes may make him miserable if he is left outdoors unprotected.

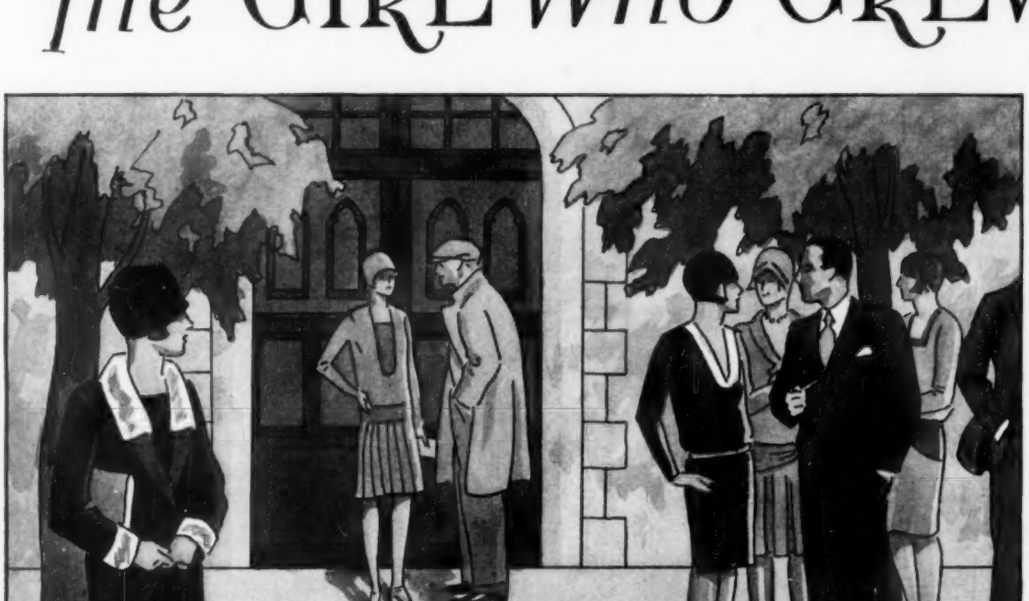
The frame of this screen house was made very simply of 1 by 2 inch furring strips, with angle irons screwed on at each corner. Five frames were made and netting was tacked on while they were flat on the workroom floor. Then the four sides and top were assembled and lightly fastened with finishing nails, providing an easy means of taking down and storing the sections in winter. The front was hinged at the top so that a full-sized baby carriage could be rolled in and out and the play pen could be easily put in or removed.

By building such a shelter in a perfect cube, 4 by 4 by 4 feet, all design complications are eliminated.

—H. ROSSITER SNYDER.

The GIRL Who GREW UP Too Soon

By Clara Bassett



Alice enjoyed none of the normal joys of friendships with boys and girls.

IF THE spoiled child indicates one extreme of parental handling, the other is represented by the serious, responsible little old man or woman who often has never known the joyous, carefree period of childhood and youth that is the right of every young thing.

Although perhaps not nearly so crippling an experience as having been spoiled, premature contact with hardships and suffering in the world and the too early assumption of adult responsibilities deprive the child of a happiness and gaiety that serve as excellent preparation for the development of normal, happy maturity.

In this story of Alice, it is possible to glimpse the circumstances under which a child may be exposed to such conditions and the kind of personality that often results.

Alice, a slender, pale, solemn-faced girl of 17, was brought to the neighborhood house by her mother for a physical examination. The mother was worried because Alice was "nervous," showed some muscular twitching, occasionally cried for no apparent cause, and often complained of difficulty in eating and digesting properly. The symptoms had been noticed for a long time, but it had been difficult to persuade the girl to remain away from school long enough to be examined. Even now that she had decided to come, the girl was fearful that she would not get back to school on time.

It was obvious that to both the mother and girl school attendance and scholastic success were considered to be of paramount importance. Alice was in the last term of her fourth year of high school, and while she had passed her grades regularly and had always had marks of high average or above, the work of high school had never been easy for her.

Long, weary hours of study throughout the school year was the price Alice paid for her school success. Her last year in high school had been especially difficult, but in spite of the strain, both mother and daughter were determined that Alice should enter the normal training school the next fall in order to become a teacher, the goal of their ambitions.

A careful physical examination of Alice revealed no physical conditions that could account for the girl's symptoms, so an effort was made to understand the situation on a psychologic basis. The family history revealed that Alice's mother, who had previously worked as an embroiderer, had married the father when she was 24 and he was 39.

The mother's own childhood had not been a happy one, as she had been the sixth of ten

children brought up strictly under the domination of a father who had enjoyed the fear of him that his children displayed. She had looked forward eagerly to romance and a happy home. When she married she was much in love, and she was painfully shocked shortly afterward when she discovered that her husband was a heavy drinker, frequently staying away from home all night. His income was irregular, his drinking made him disagreeable in his relationship with her, and his slovenly habits disgusted her.

Because of the birth of Alice, a year after her marriage, the mother had made every effort to make the home a success but felt forced to leave her husband when the child was 7 years old. She placed Alice in a church school, where rules were rigid and the discipline was severe. The mother then returned to her former work as an embroiderer, and after two years was able to establish a small home and bring her daughter to it.

The mother's life, however, had been a bitter disappointment to her. The unhappiness of her childhood, her wrecked marital venture, the necessity of facing life on her own responsibility and the strain of earning her living all tended to accentuate the attitude of depression and melancholy. The small, serious, repressed child of 9 assumed responsibility quickly, and she began to do all the housework in the little home in order to lighten the responsibilities that rested heavily on her mother.

When the mother returned tired from her day's work, the child waited on her as best she could and attempted to comfort her when she sometimes spent hours weeping disconsolately. The mother made no friends and found for herself no recreation or outside interest, but spent her entire time with her daughter.

The two grew to feel very close to each other. The mother, seeking comfort and some one to share her disappointments and disillusionments, discussed her life experiences with the solemn child. She even told the girl that her experiences with men had made her feel that she was through with the whole sex and she solemnly warned the child against them.

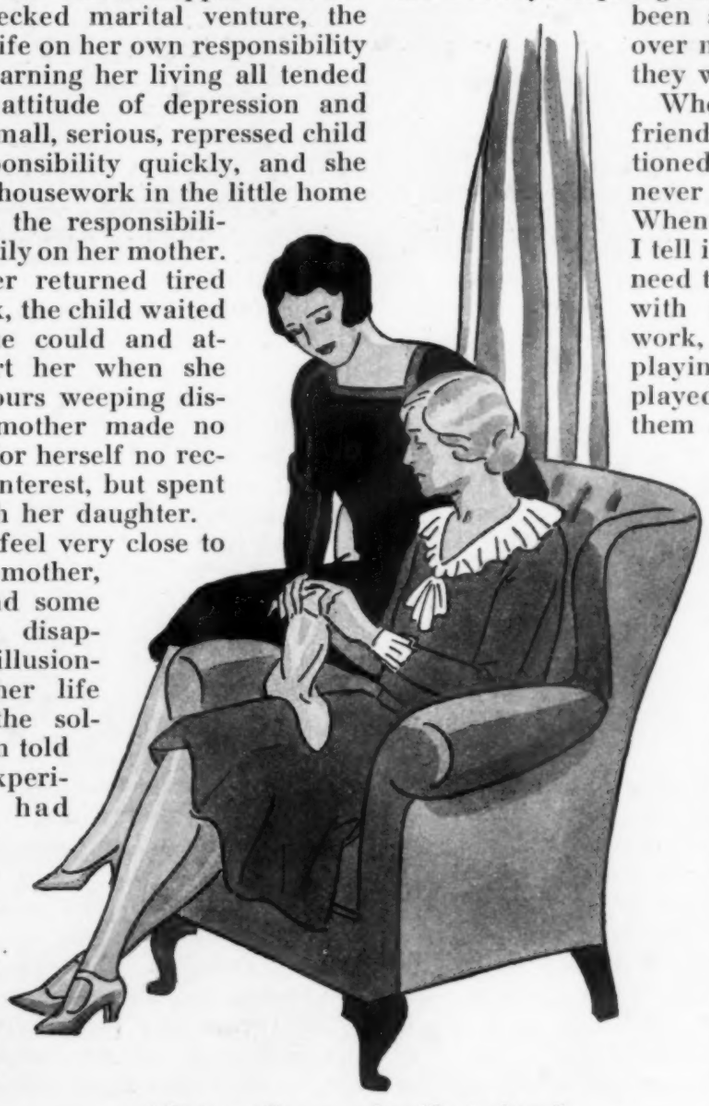
Naturally, Alice, oppressed by her sad knowledge of the ways of the world and weighed down with responsibility, felt much older and more sedate than children of her own age, whom she considered rather silly. Although she sometimes walked to school with one or two little girls, she made no close friends and had no recreation of any kind.

At school, Alice was intensely conscientious, and her whole life was centered in the driving ambition to become a school teacher at the earliest possible moment in order that she would no longer be a financial drain on her mother. All her spare hours were spent over her school books. A poor mark at school assumed the emotional proportions of a calamity to these two isolated persons.

When Alice's lack of friends and fun was discussed with the mother, she said: "But she doesn't really need any friends, for I am her best chum. There never has been a better child in the world. She has done all the housework from her ninth year and she gets up nights and waits on me like a trained nurse when I am sick or depressed." The mother and daughter have always slept together. Whenever Alice has been away from her mother over night, she has wept until they were reunited.

When the desirability of friends and play were mentioned to Alice, she said: "I never bring any one home. When I have anything to say, I tell it to my mother. I don't need the other girls. Besides, with my school and home work, I haven't time to waste playing." Alice has never played with boys and regards them as entirely alien to her existence.

The mother's lack of outside interests and contacts has resulted in an emotional accentuation of the importance of every detail in the home. She has been fussy about Alice's diet, and her overanxiety about the girl has resulted in her exaggerating every symptom the child has displayed. Alice was finicky about her food and there were many things she felt she could not eat. The depressive, anxious atmosphere resulted in a loss of appetite and marked constipation.



Alice's mother was her "best chum."

When a girls' camp for the summer was suggested to Alice, she found it impossible to consider it. In spite of her mother's assurance that they could afford it, the girl insisted that she knew that she would not like a summer camp as she and her mother could never bear so long a separation.

This overly serious, humorless child with her worries over her school work, her driving ambition, her total lack of friends and recreation, her extreme dependence on her mother, her solemn, conscientious manner and her anxiety over her health is a typical picture of the results that may follow the efforts of parents to share their burdens and worries with their children and to depend on them for companionship and satisfaction in life.

The Parents' Duty

Every child has an inalienable right to as happy a childhood as it is possible to give him. He is not a small sized adult to share the problems, worries, disappointments and disillusionments of an adult world. The little child is a tender, plastic, immature organism, highly impressionable and absorbent of all the attitudes and situations about him. In the case of Alice, she has been defrauded of the gaiety, spontaneity and joy of a happy childhood.

It should be possible for parents to feel that the child is a fresh start in an old and weary world, and that they must, so far as is humanly possible, protect the child from their own warped ideas and prejudices. In the case of Alice, we see a young, fresh life burdened at an early age with the sorrows and responsibilities of adult life, but even more destructive to her development is the fact that she has also absorbed and assimilated the biased mental and emotional attitudes of a thwarted mother.

This situation is best illustrated by Alice's attitude toward boys and men. She has absorbed from her mother the attitude that all men are worthless and unreliable, and her feeling about them is one of withdrawal and suspicion. She has been led to expect harm and mistreatment at their hands. Such warped views may place permanent obstacles in her efforts to secure healthful, happy satisfactions in life.

Aside from allowing youth sufficient freedom to develop its own fresh attitudes toward the experiences that come to it, unhampered by adult bitterness, it is essential to the welfare of children that parents live their own lives, have their own friends and individual interests, and not depend for their sole satisfaction in life upon their children. Parents who shut out friendships and outside interests and limit themselves to an absorbing interest in their children usually tend to maintain too stifling an emotional hold on them. Alice's mother unconsciously swallowed up and dominated her child's life to the extent that Alice was not a separate, independent personality.

It requires watchfulness and clear-eyed self-criticism for parents to avoid in their dealings with their children the many more or less unconscious aspects of parental selfishness which so easily creep into the relationship. For parents are human beings with their own deep emotional strivings, needs and thwartings, and in their struggles to gain various kinds of satisfaction and compensation, their children are their nearest and most responsive means.

The story of Alice illustrates also the dangers involved in an impoverished home situation. The word "impoverished" is used not in a financial sense but to indicate the paucity of recreation, outside interests and friendly contacts from which this lonely mother and child suffered. Cut off from all other companions, the two clung to each other and gradually their sense of values became twisted and one sided. Small events and happenings assumed vast importance and significance. Small slights were magnified into serious affairs. They did not value friendships, play and social contacts, but did place an abnormally high evaluation on school success and ambition. Such an overevalution is likely to lead to ambitions too high-flown for attainment and may result in lifelong disappointments in the vocational sphere.

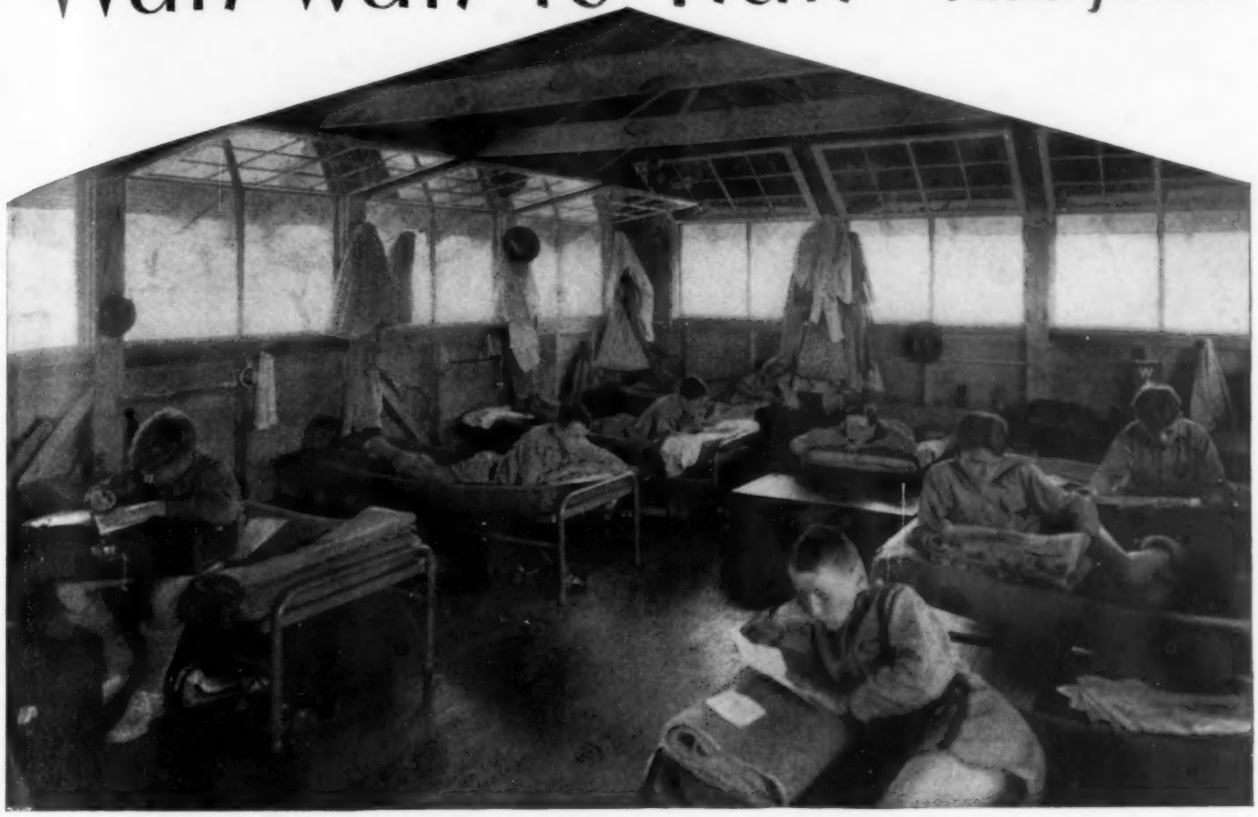
An Anemic Life

Instead of living a well rounded and varied life, including the normal joys of friendships with boys and girls, play and recreational opportunities at home and in the community, the development of diversified interests, and the cultivation of any artistic talent or appreciations that she might possess, Alice led a circumscribed and anemic life. She was conscious that something was wrong, but she had no way of knowing just where the trouble lay.

Thus her energies, instead of being used up in an interesting and satisfying way, were being diverted into vague physical symptoms, preoccupation with her physical functions, and satisfactions gained through the expressions of concern, sympathy and attention such symptoms called forth on the part of the mother. Under the circumstances, the girl's physical symptoms were the most interesting thing looming on the narrowed horizon of these two persons.

It is indeed sad that in a world filled with infinite richness, color and variety, children like Alice should grow up defrauded of spontaneity, freedom of development and breadth of experience. Parents must take the responsibility for seeing that their children are not doomed to a meager narrowness of life, but they cannot give their children that which they themselves neither possess nor appreciate.

"Wah-wah-le-nah" The Secret Hiding Place



By
Fred Ellsworth Clow

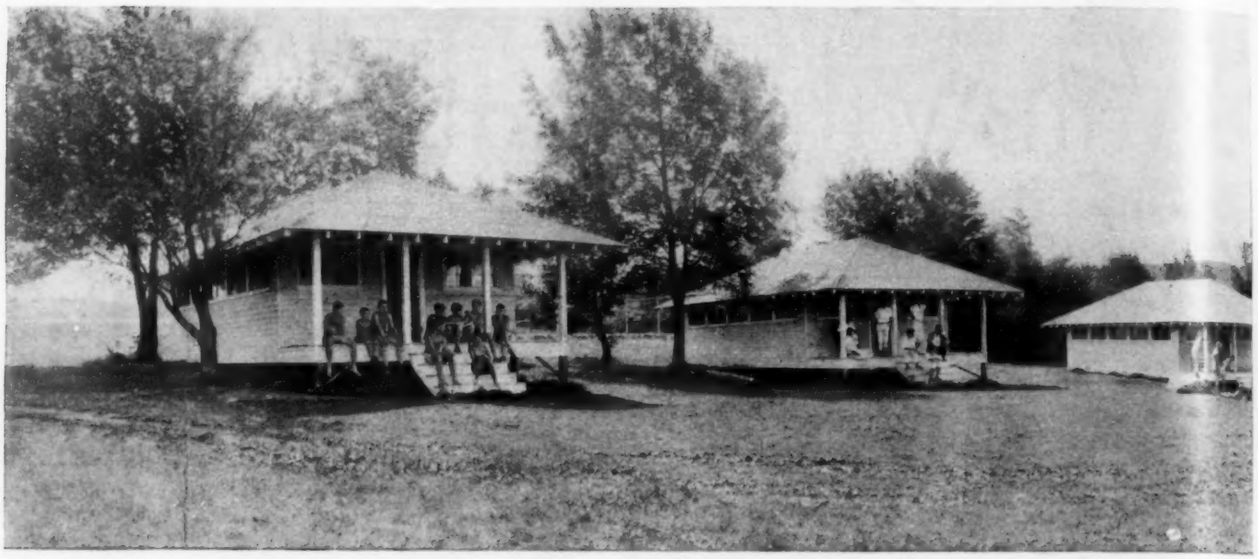
WHEN "Wah-wah-le-nah" was built, 8 miles from the town on a peninsula jutting into Big Lake, the director realized that there were certain provisions that must be made for the best hygiene, if this camp, one among many in the North State, was to become the success he dreamed. The site chosen was only partly covered with pine growth. It sloped to the lake, favoring rapid evaporation and drainage after rains. The soil was porous and dried quickly. The large open space became the athletic field, around which the roomy bungalows grouped themselves, each named for an animal of the North State.

Pure water was brought to the camp from a hillside spring; at one side of the reservation septic tanks were installed. The drainage did not enter the lake but was distributed through an ingenious system of underground trenches. Milk came from a farm 3 miles away. The farmer was a graduate of the state university and understood the necessity for careful supervision of the dairy supply. Every precaution was taken to prevent the transmission of disease from both the men and the cows.

"Wah-wah-le-nah" exists only in the imagination of the writer, but it embodies the best features of a large group of summer camps.

The director chose his assistants and his servants with utmost care to eliminate the possibility of communicable disease. Every person received a rigid physical examination. The camp physician was a graduate in medicine with hospital training. To complete the health safety scheme, arrangements were made with the local hospital and a member of its staff for consultation and immediate assistance in doubtful cases. Contact was maintained with the local health officer who immediately notified the director when any contagious disease made its appearance in the town.

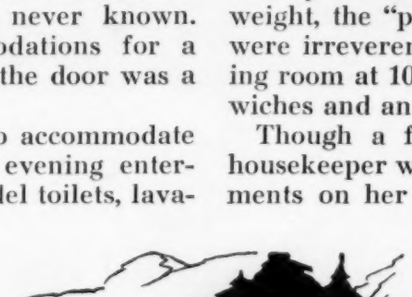
Individual frame bungalows were provided for the boys with many screened windows, as well as two doors. Electric lights from the small camp plant re-



A boys' camp developed on the bungalow system with good drainage, pure

moved much of the danger of fire. All windows were provided with shutters hinged at the top to keep out driving rains. Each boy had ample space for his bed and personal belongings. During each forenoon all bedding was thoroughly aired and sunned on the ground in front of the bungalows. Inspection of bungalows and bedding prevented disorder and established habits many boys had never known. Every bungalow had accommodations for a leader and eight boys. Outside the door was a drinking fountain and faucet.

The lodge was large enough to accommodate the entire camp group for the evening entertainments. In the basement model toilets, lavatories and shower baths removed all excuses for slovenly habits.



The large dining room at the end of the lodge comfortably accommodated all campers at one sitting. Each house leader had a table for his own eight boys.

Scattered about the grounds were plenty of sheet iron cans for the rubbish that always collects. The camp police, chosen every week from the boys themselves, saw to it that no boy disregarded these receptacles. Back of the camp one of the camp employees each day supervised the burning of all garbage and rubbish.

All low spots in the camp area had been drained to remove mosquito breeding places; all underbrush was cleared away. The second year saw the removal of many large stones, because it was found that city boys, accustomed to pavements, had a great tendency to bruise shins and toes in walking over uneven ground.

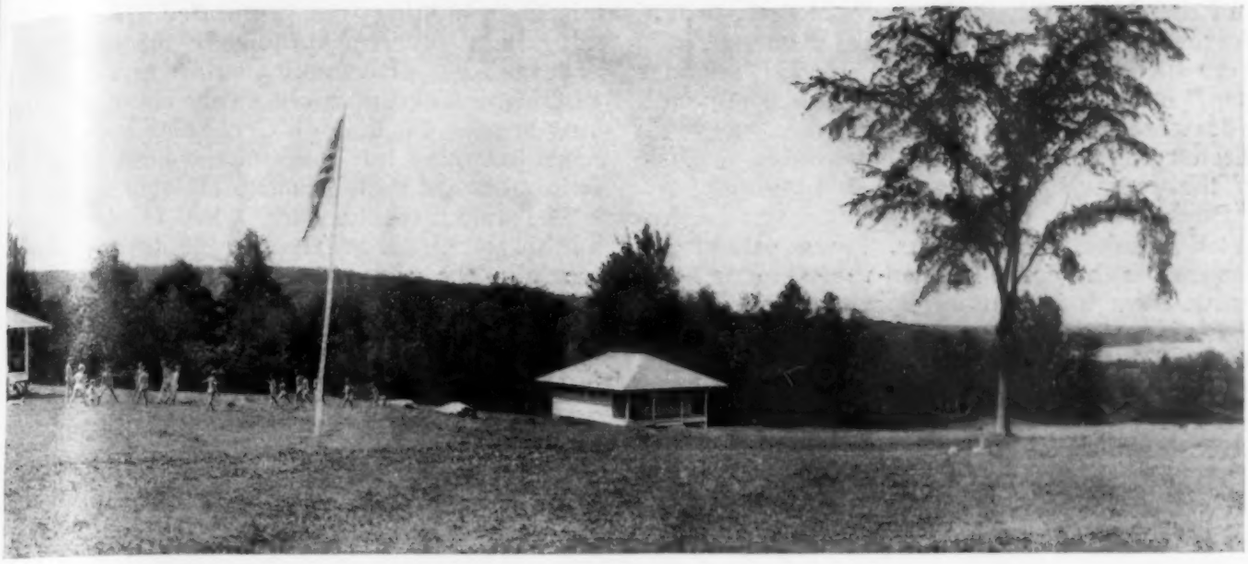
No animals were allowed in camp. All firearms were prohibited.

The kitchen was governed by the housekeeper, who had had plenty of experience in feeding growing boys. Milk and eggs in plenty, fresh vegetables, fresh fruits, cereals, the humbler cuts of meat, and fish comprised her dietary formula. All campers who were underweight, the "physical wreckage" group, as they were irreverently dubbed, reported at the dining room at 10 and 3 o'clock each day for sandwiches and an extra glass of milk.

Though a faithful student of dietetics, the housekeeper was never led to try dietary experiments on her family, however successful they had proved in animals. She felt that there was no possibility of overfeeding her charges, living as they did close to Nature. Every boy, no matter how perverted his eating habits at home, soon learned that he was expected to eat as the rest of the camp—and he did. The cooks and waiters had been carefully chosen after physical examination had shown freedom from disease. A health record from year to year was required of each.

The pantries, kitchens and dishwashing rooms were unsheathed and severely plain, but as they were plentifully supplied with hot water, scrubbing was a simple process.

Parents were requested to refrain from sending boxes of "goodies" from home. They were urged to keep in touch with the director, because no one knew when an emergency requiring parental consent for its management might arise. It was felt that fathers and mothers



water supply, adequate sewage disposal and proper medical attention.

should not compel the assumption of such responsibility by the director.

A short distance from the lodge the doctor had his office next door to the rest house. The infirmary had one bed for each fifteen boys. To it were sent not only boys who were ill but boys who showed signs of fatigue. A competent camp mother, who in winter was a practical nurse in the town, ministered to rebellious stomachs and stone bruises with equal sympathy and interest. A small nearby cabin with two beds was reserved for boys needing possible isolation. The rest house was far enough from bungalow row to prevent the sounds of the general camp reaching the boys in both cabins.

The doctor's office was equipped with drugs and all facilities for ordinary illness. A wise consultant had advised certain rules, among which was "few drugs and much water and rest."

Each day during the siesta the director with the doctor and housekeeper made an inspection of the entire camp.

On arrival each group reported at the doctor's office for a complete physical examination. Here the doctor noted the card brought from home, recording the family physician's estimate of the camper's physical and mental condition. Every boy was thoroughly investigated for his own safety as well as the safety of all other campers. No boy was permitted to stay in camp when he had any contagious skin disease, or a cough, or was subject to "spells."

Parents of all boys were requested to keep their prospective campers from contact with other children for a fortnight before camp opened to lessen the exposure to contagious disease. From previous experience the director knew the difficulty of stopping an epidemic of mumps or measles. While in camp the boys were not allowed the privileges of the town cinema theater for the same reason.

Sickness was reduced to a minimum, because each boy's limitations were known; extreme fatigue was eliminated; dietary indiscretions were not permitted; contagious disease, so far as possible, was excluded. The director felt a personal responsibility for each day's illness of a camper; the doctor felt that his skill in prevention was being questioned; the housekeeper was certain that her department had developed a weak spot.

In addition to being regularly weighed, every camper was silhouetted for posture at the beginning and at the end of the camp season, so that he carried back home striking evidence of his improvement.

Every house leader had been instructed in the signs of illness and fatigue, so every boy was under constant surveillance. Cough, fever, lack of appetite, flushing of the face, indisposition to play—any untoward sign—brought the camper immediately to the doctor's attention.

Parents were requested to visit the camp as little as possible, while younger brothers and sisters were entirely excluded. These rules seemed unnecessarily harsh to some parents but on one occasion it kept whooping cough from becoming a camper too.

After the danger of contagious disease had passed away in the first two weeks of camp life, both the director

and the doctor felt that reasonable care would prevent their appearance that year. There were sure to be some cases of illness; "summer grip," infected ears, and a rare case of appendicitis were certain to be recorded. Boys with discharging ears gave the most trouble, because of the precautions necessary in bathing.

Boys of the younger age groups were segregated from the older youths. It was established soon after the camp opened that smaller boys, brave enough in competing with the strapping lads of more mature years, became fatigued and lost weight through strenuous efforts to maintain too swift a pace. One part of the camp was allotted to the Juniors, who had their own activities, their own siesta and bed hour.

To prevent water accidents the life-saving crew was trained to keep a constant watch over all campers when they were in the lake. Promiscuous bathing was prohibited. The swimming hour called everybody to the beach and boat landing. Overlooking both was the Tower, where the look-out could easily count the bobbing heads. On the outskirts older boys in row boats patrolled the limits of the pool. Embryo swimmers did their practice close to shore.

The state inspector came when least expected but his search for breaks in technic were unsuccessful. The camp always was given a perfect rating.

"Wah-wah-le-nah" has been the ideal toward which all camp directors have striven. It has been found not impossible of accomplishment. Some directors have attacked individual problems in a different manner, but the results have been so consistent as to prove the value of the high standards maintained in this model summer camp.

Meet These New Vegetables

WE AMERICANS have been slow to learn to use the many good vegetables enjoyed in European and in some Oriental countries. From my own knowledge, I am tempted to add to the list of the less usual vegetables given by Miss Lulu G. Graves in the May issue of HYGEIA.

An excellent vegetable largely used by the Italians is radicchio. The plant will grow wherever tomatoes will grow. It is grown from seed broadcast over a small plot of ground. A space 6 by 6 feet will supply a big family. It should be sown at intervals of three weeks so as to have successive crops coming on. When it is from 3 to 5 inches high, the radicchio with French dressing makes a superb salad.

When the plants are about 15 inches high, they form roots about the size of candles. The roots are clean, white and tender. Scraped, boiled or steamed, sliced and served with French dressing or sauce vinaigrette they are delicious. They are bitter but people soon acquire a taste for them.

This plant is one of the best vegetables known to aid in keeping the bowels in good functional condition. The tops are eaten almost daily in the growing season by the Italians.

Zucchini, or Italian squash, is another splendid vegetable. It can be grown in any part of the United States. The full grown squash weighs 15 or 20 pounds and at full size is good only for the seeds it contains or for stock food. The small squash, about the size of a dill pickle, is edible. It may be boiled or steamed, mashed and served like any other summer squash. Sliced thin, without peeling and fried in butter, it is fine. Split in halves and the center hollowed out, the portion dug out mixed with bread crumbs and ordinary condiments and stuffed into the hollowed out shells and baked, it is choice. Another method of preparation is to cook it with tomatoes and bell pepper, about three fourths of the mass being zucchini.

Escarole, a member of the chicory family, minus the bitter taste, makes a fine bland salad and it is easily produced.

Endive is choice. I must explain that it is the seed of common chicory and the chicory plant that are sold in the market as endive.

Endive has to be grown in a dark room at 90 F. The plant, when it comes to market, is from 4 to 6 inches long and resembles a small ear of corn with thick, white husks.

Boiled or steamed for twenty minutes and served with drawn butter, it is splendid. It can be cut in not too small sections and served uncooked with French dressing as a salad.

Kohlrabi, a Swedish vegetable, is called a "cabbage turnip." The bulbous edible part is grown about 2 inches above the ground. The leaf stems for the most part come from the entire surface of the bulb instead of from the top like turnips.

Sliced thin and fried in plenty of butter, kohlrabi is most appetizing. It makes a choice salad when cut in strips, boiled or steamed, then chilled and served with sauce vinaigrette.

The topepo, resembling both the bell pepper and the tomato, is a splendid ingredient in a vegetable salad. Stuffed and baked in the manner of baked tomatoes, it is also choice.

—ETHAN H. SMITH.

SIMPLE LESSONS *in* *Human Anatomy*

By

B. C. H. Harvey

LESSON VI

Cartilage and Bone

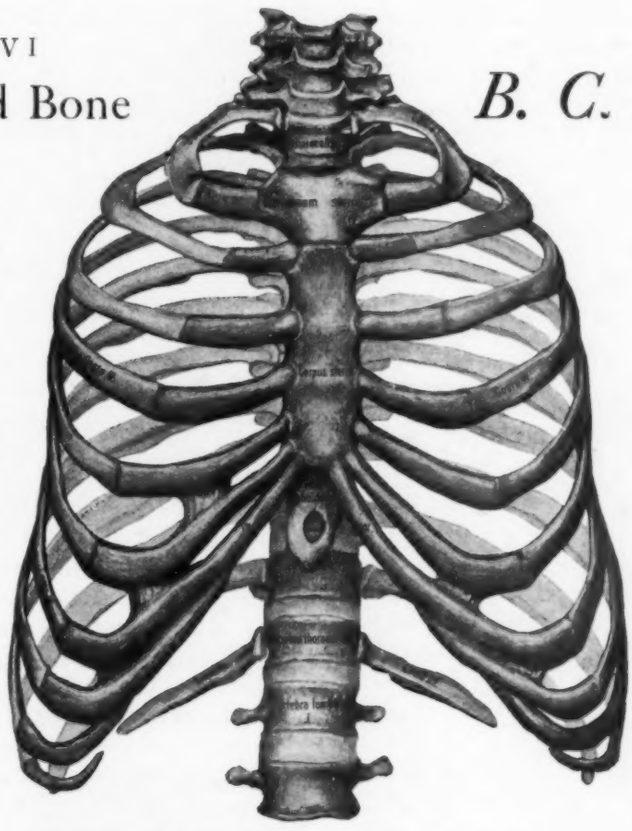


Fig. 42.—Skeleton of the thorax of a man. Between the sternum and each bony rib is cartilage. The seventh rib cartilage is the longest. (From Rauber-Kopsch.)

CARTILAGE is popularly known as gristle. It can be cut readily in any direction but is nevertheless firm and exceedingly elastic. It yields to torsion or bending strains but returns at once to its original shape when the strain is removed. It is usually bluish white, although yellowish in some varieties, and it has an interesting opalescence. Thin slices are transparent or translucent, but thick masses are opaque. Cartilage is enclosed in an envelop of fibrous connective tissue which contains blood vessels. The connective tissue covers all parts of the cartilage except that forming joint surfaces, which is not covered.

A glance at figure 42 will show that the skeleton is made up partly of cartilage. The anterior ends of the ribs where they join the breastbone are composed of it for several inches; the joint surfaces of long bones are covered with a layer of cartilage. The disks between the individual vertebrae in the backbone are cartilage. Bone and cartilage are evidently closely related tissues; both are formed from connective tissue, as is also the other part of the skeleton, the ligaments.

Connective tissue becomes in one place cartilage, in another bone and in still other places it remains fluffy like absorbent cotton immersed in water, or it is condensed into ligaments, tendons or fibrous membranes. These membranes may contain any proportion of white fibers or elastic fibers according as strength or elasticity is the dominant need of the part.

Thus connective tissue is capable of assuming many forms, becoming hard as in bone, transparent and springy as in cartilage, forming tough but pliable cords as in tendons, or clothlike membranes which may be woven through by elastic bands.

One is reminded of cotton, which under the action of chemicals is made to assume a similar variety of forms. Nitric acid transforms it into collodion, which in its most familiar form is a transparent membrane. Nitric acid and camphor make it into celluloid, which replaces ivory in billiard balls. Other chemicals transform it into flexible and transparent substances like cartilage, from which combs or handles of tooth brushes are made. We are familiar with it as cotton cords or cloth, which may be made by soda to resemble silk. Cotton has a great faculty of combining with chemicals and so becoming transformed into a variety of useful substances. So has connective tissue, and some of the chemicals in the body have a startling similarity to those used in the chemical laboratory. The fluid between the connective tissue cells has this property in the highest degree. Cartilage is the result of a combination of this

intercellular fluid with sulphuric acid and another complex organic acid. Our bodies are active chemical laboratories.

Cartilage is present in the skeleton wherever the supporting framework of the body has need of its special qualities. These are: elasticity, flexibility, a fair degree of firmness, compressibility, total absence of sensation, rapid growth and independence of blood vessels. It is found in the thorax where the ribs join the breastbone; the ribs twist in breathing movements and they yield to blows and compression, thus preventing fracture. It is found at the ends of all the long bones, forming shock absorbers in the joints of the legs, and thrust blocks, which take all the wear and tear. It is found in disks between the vertebrae, where it permits the twisting movements of the body. It supports the nose and ear appendages, which yield readily to force and yet return to their shape. It is in the respiratory tubes, the larynx and trachea, which expand sometimes but which do not collapse when the air is drawn in.

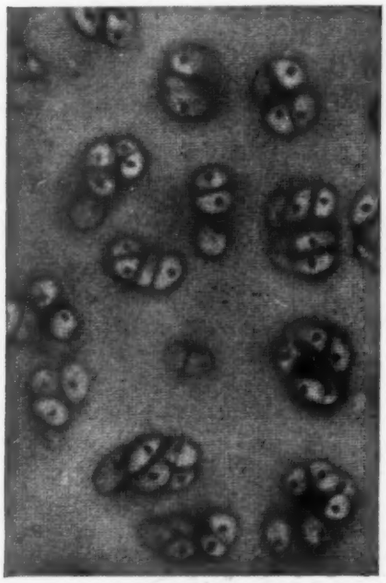


Fig. 43.—Section of rib cartilage magnified 250 times. The cells have clear substance between them. (From Bouin.)

These qualities are indispensable in the adult, but, as we shall see, the power of rapid growth makes cartilage still more indispensable in the fetus. It is interesting to note that in the lowest vertebrates, like sharks and sturgeons, it is the only supporting structure present in the body. When connective tissue is compressed, it tends to produce cartilage anywhere.

Young connective tissue becomes transformed into cartilage by a few changes in its cells, in the white and elastic fibers and in the tissue fluid. Figure 43 shows the structure of fully formed cartilage. The cells lose their processes, they become rounded and develop within them, in addition to the ordinary cell contents, fat particles and a sugar-like substance, glycogen. The intercellular fluid becomes changed first into mucus, which gradually hardens into the semitransparent material that gives cartilage its characteristic substance and solidity. This substance is a combination of several chemicals, an albumin like white of egg, another albumin which sets into a material like horn, a jelly-like glue and an organic acid characteristic of cartilage. As the cartilage gets older, this organic acid gradually combines with sulphuric acid; then the whole mass "sets" into gristle and acquires the properties that give cartilage its peculiar usefulness. This firm but elastic substance fills up all the space occupied by the cartilages and so gives them their individual form and size. It completely surrounds the cells; they lie in little cavities within it, sometimes in groups of five or six. Necessarily it has incorporated into itself all the fibers that were in the connective tissue, both white and elastic.

Three Kinds of Cartilage

In the human body are three kinds of cartilage, distinguished by the character and appearance of these contained fibers. Hyaline cartilage (fig. 43) is the common variety; it is clear and transparent (hyaline means "glassy"), but it contains many white fibers. They are not apparent, because they are so thoroughly permeated by the chemical substances just mentioned that they are invisible. The transparent cartilage seems homogeneous, but the fibers can be unmasked by soaking hyaline cartilage in a solution of permanganate of potassium or even in common salt. This is the form of cartilage present in the ribs and on the joint surfaces of the bones.

Fibro cartilage (fig. 44) is a form in which the white fibers are especially numerous and coarse; they are visible. Such a cartilage is not glassy but opaque, is tough and is found in the disks between the vertebrae.

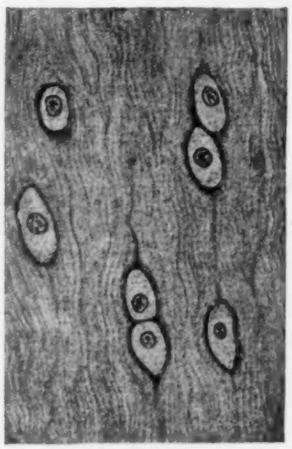


Fig. 44.—Section of fibro cartilage magnified 570 times. (From Szymonowicz.)

Elastic cartilage (fig. 45) is a form in which the fibers are nearly all of the elastic variety, giving the cartilage its characteristic yellow tint. It is not transparent, is exceedingly flexible, and is found where this quality is especially needed, as in the external part of the ear and in the epiglottis—the little lid that covers over the larynx and adjusts itself so neatly to its surface that not even the water we swallow gets under it.

In all these forms of cartilage the cells are imprisoned (figs. 43, 44, 45). They are isolated but remain alive and grow. How do they get

their nourishment? Cartilage contains no blood vessels and no lymph vessels. They are nourished by fluids that soak through the cartilage. This apparently solid substance takes up body fluids somewhat as leather takes up oil. Intermittent pressure helps the diffusion of fluid. That is one reason why cartilage is so well fitted to cover the joint surfaces of bone. It has no delicate blood vessels to be injured and the intermittent pressure applied, for instance in

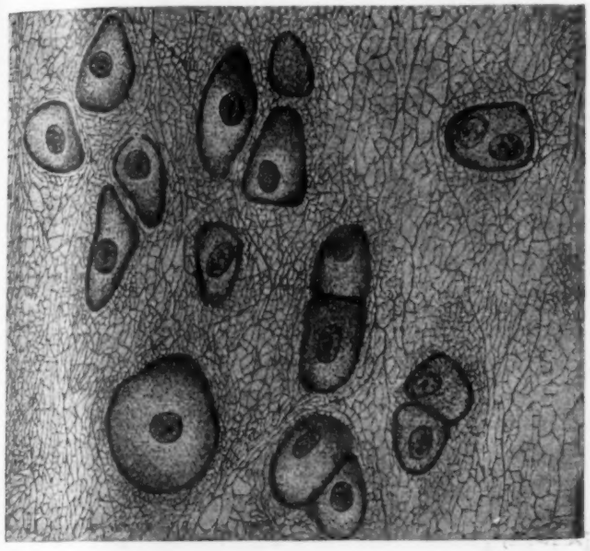


Fig. 45.—Section of elastic cartilage, magnified 570 times. (From Szymonowicz.)

walking, does not hinder the movement of fluids through it; it helps.

How do the cells get bigger and multiply, if they are encased within tiny cavities of the cartilage? The whole mass grows throughout, including the cavity. Young cartilage grows with startling speed; that is one of its most valuable properties. Rapid growth is necessary in early life. It grows partly by the addition of new cartilage on the surface. Cartilages are covered by vascular fibrous envelops, from which nourishment is supplied to the underlying substance. This envelop forms new cartilage, which is constantly being deposited on the surface of the old. The membrane covers all parts of the cartilages except only such ends of them as may constitute the joint surfaces.

But cartilage grows also in another interesting way; it grows in its interior, by interstitial growth. New molecules of its substance are added everywhere among the old ones, and all are constantly readjusted in position, so that the general shape of the mass is retained, though it grows in all three dimensions. In this capacity of readjustment of its substance during growth, solid cartilage seems to be almost like a fluid; and in this process the cavities become larger and the cells divide. The two new cells so formed remain close together while very young, but soon become separated by partition walls of the general substance, each being contained within its special cavity (fig. 45). Sometimes small groups of cells lie in one cavity (fig. 43).

When cartilage gets old, it tends to take up calcium salts, and some of them get precipitated in it. They interfere with its flexibility and elasticity and make it rigid. They appear in the cartilage of the larynx at about 20 years, and in the others at certain definite times, except in elastic cartilages, which are exempt. Such calcification marks the end of growth, because the marvelous fluidity of readjustment of substance is lost. That is the beginning of degeneration; such a cartilage is dying and is likely to be replaced by bone.

Cartilage Insensitive to Pain

Unlike bone, cartilage contains no nerves and so cannot feel pain; that is another reason why it is so useful on the joint surfaces at the ends of bone. When we come down hard on one foot, all the cartilages on the joint surfaces in that leg are hammered by the bones with the full force of our weight. They absorb much of the shock, but they feel no pain. Even when we carry heavy loads and the top of the femur grinds into its socket on the hip bone like a pestle grinding in a mortar (fig. 46) we feel no pain, because the surface cartilage takes all the grinding and it has no nerves.

Clearly, there is much wear on these surface cartilages; they need to grow constantly to make

Fig. 46.—Section through hip joint, showing joint cartilages. (From Rauber-Kopsch.)

up for it. They remain young and renew their substance till we are old, but in the joints in men of 80 or more sometimes the cartilage has given up the struggle; new growth no longer replaces the substance worn away, and the layer of cartilage gets thinner and wears through. Then bone meets bone directly; the old joints grind and creak; they burn and are full of pain; eighty years ails them.

Fig. 47.—Femur of new-born baby set into femur of adult, showing its relative size. (From Fischel.)

Bone grows from young connective tissue. Cartilage has the same origin. In experiments intermittent pressure tends to make connective tissue form cartilage; abundance of calcium salts and of connective tissue cells tends to make it form bone in regions in which the blood circulation is sluggish. In the human embryo it forms cartilage in all the places in which cartilage is found in the adult and also in nearly all the places in which bone is found in the adult. Nearly all bones are preceded by a cartilage model; only a few flat bones like those of the skull cap are formed directly from connective tissue. It is because bone grows usually by destroying and replacing hyaline cartilage that consideration of this subject has been postponed until after the study of cartilage.

How Bone Can Grow

The growth of bone has always been a subject of great interest, because of the apparent impossibilities involved. Bone is rigid and durable, yet it grows rapidly up to the age of about 18 years. It has to be rigid to support the weight of the growing active child. We have seen that it may endure in the ground for nearly 500,000 years with little change. How then can the great changes take place that are involved in growth (fig. 47)? These changes must involve every particle of the bones, and the bones are in constant use while they are growing. After growth has ceased, if a bone is broken even in advanced age, it grows again enough to mend the fracture. We have noted that active blood circulation dissolves bone and makes it weak and porous, whereas phosphates and vitamin D make it strong and solid.

This rigid bone, which is so durable in a sand hill, is very changeable in the living body. It is always being built up and being worn down. At any moment the structure existing represents the temporary equilibrium of the moment. In old age the destructive activities get ahead of the constructive; the bones become porous and brittle; they are easily injured and they do not mend well. Fractures are slow to unite after 70.

Among the first vertebrates that appeared on the earth were the primitive sharks; they had no bone, only cartilage. The development of the individual tends to repeat the development of the race and the human body in the first seven weeks of its life is like the primitive vertebrates; it has only cartilage. In a human embryo 45 days old the place of each bone is occupied by a tiny model of the future bone. The model is made of clear, transparent, hyaline cartilage (fig. 48). This is true of all bones except a few flat bones like those in the skull cap; in them the model is not cartilage but is a membrane of young connective tissue. A skeleton of cartilage is much better than a bony one at this early stage because it can grow so rapidly and great rigidity is not yet required.

The speed with which the embryo grows is amazing; at the end of the second month it is 500 times as big as at the beginning of that month. The skeleton, like the rest of the body, grows during the first 18 or 19 years of life with marvelous speed at the beginning of that period, with diminishing speed at the end. Then it stops; the skeleton never gets any larger: any further growth is just enough to repair injuries or wear and tear.

Period of Most Rapid Growth

At the end of the second month the whole body is one inch long. The cartilaginous femur is ⅛ inch long. The femur of an adult is about 18½ inches long. Thus the femur multiplies in length 148 times between the ages of 50 days (intra-uterine) and 18 years. It increases in thickness proportionately. The way the cartilaginous femur becomes gradually replaced by bone is selected as an example of the way in which growth occurs in all tissues.

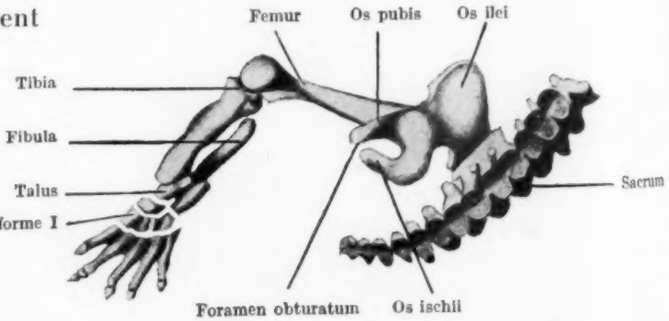
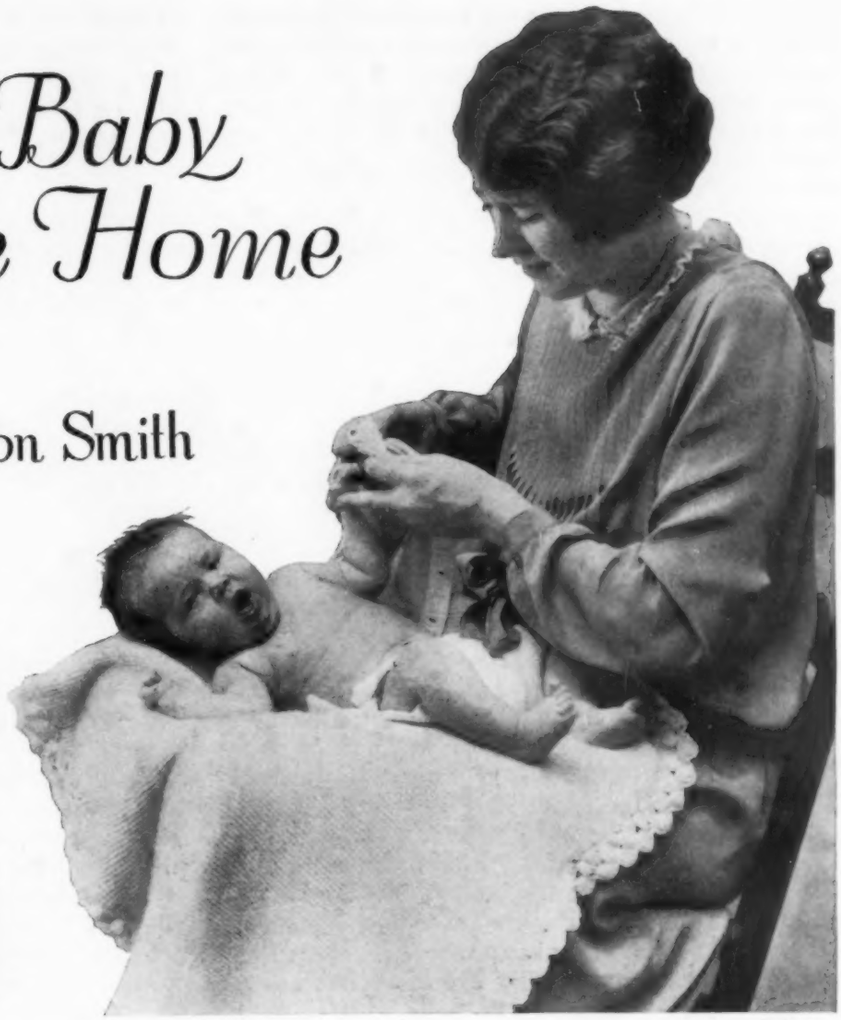


Fig. 48.—Cartilages of lower extremity in the human embryo, seven weeks old. (From Fischel after Bordeen.)

(To be continued)

The First Baby in the Home

By D.C. Wharton Smith



H. Armstrong Roberts

Babies are naturally healthy and can stand more than a great many adults.

MANY parents are almost panicky when the first baby arrives owing to fear that they will be unable to care for him properly. They must make an early decision. Are they going to spoil him by overattention, making him so irritable that the whole household is in a constant turmoil, or are they going to let him develop naturally on a sensible training regimen that brings real enjoyment to the home?

The majority of older children who present serious problems from a behavioristic standpoint have been brought up by overzealous, constantly worrying parents, who have not trained them properly in the early months and years. In order to avoid trouble for the future and to enable parents to enjoy the first baby more thoroughly, I am offering a few suggestions that I hope will prove helpful.

Have Baby Thoroughly Examined

In the first place, it is important to have your physician examine the baby thoroughly, and if he is pronounced organically normal to dispel any present worry, as babies are naturally healthy and can stand far more than a great many adults.

One of the most important things to realize is that the baby must be let alone. Do not rush to him whenever he stirs or pick him up whenever he cries. If he cries a great deal, there is usually some reason for it; often he is not getting enough to eat, but your physician can talk the situation over with you and advise you as to the cause. Do not worry and begin to spoil him, for if you do he will soon be running the household and everybody will be upset.

Put the infant on a regimen with regular hours for his bath, sleep and feedings. During the early months of life he should sleep most of the time, and should be taken up only at four-hour intervals to be fed and changed. Experience has shown us that as a general rule babies do far better on a four-hour schedule than on a shorter one.

Do Not Nag Young Explorer

As the baby grows older and begins to walk, it is natural for him to run about and explore everything with which he comes in contact. While he is not destructive at heart, valuable articles should be kept out of reach, for until he learns by experience he will probably break a few. While he is going through this stage, remember that he has to learn a few things for himself, so do not ruin his disposition by constantly jumping at him; and do not nag him with sharp commands. If you do, you will find that he will soon pay no attention to you.

Many children develop a condition known as negativism, a determination to do just the opposite of what is expected of them. Such a child, if his presence is wanted in a room, will probably not come if urged but will do so if he is told not to come in. He takes delight in doing what he is supposed not to do on account of the "rise" he gets out of those persons in authority. Such behavior makes him the center of attraction, which is what he wishes. In handling a child like this it is better to pay as little attention to him as possible, for he will soon come around when he finds that he gets no reaction from those about him.

Avoid making issues over trivialities; but when you do have to make them, be firm and insist on carrying your point.

The young child so reacts to his environment that parents must guard their own mode of behavior when with him. For instance, if a mother is afraid of a cow or a dog, she must be careful not to show fear when such an animal is met, or the child may develop a simliar fear which he may not get over for years. He is naturally fearless and will continue so under a normal environment.

I am impelled to say a few words regarding clothing. From time immemorial, babies (not delicate ones) and young children have been overdressed. I believe that the majority of colds, in cases in which there is not a direct contact infection, are due to the fact that the active, romping child becomes overheated. A child is unquestionably healthier underdressed than overdressed. Of course when outdoors in cold weather he should be warmly dressed. However, the mother should take off his extra clothes as soon as he returns to the warm house or hot apartment. Here the temperature is often like summer heat, so she should leave on him what would correspond to summer clothing.

Sun Baths

Sun baths have certain well known therapeutic values that are important for the baby's development. The naked body must be exposed directly to the sun's rays, as the rays will not penetrate through glass or a screen. Your physician should be consulted concerning the length of exposure and other details.

There are a few important feeding problems that worry parents. In the first place there is no food that in all cases takes the place of mother's milk, the food that Nature provides for the new-born infant. If the mother's health permits it and if she is fortunate enough to have a good supply, there is no reason to make a change. One can never go wrong by "letting well enough alone" when an infant is progressing well. If the supply is insufficient to satisfy him or to cause him to increase in weight, one can add supplementary foods according to the infant's age and the advice of the physician. The doctor will suggest the proper time for weaning the baby after he has taken into consideration the time of the year, the health of the mother and the baby's general condition.

However, should it be impossible to nurse the baby, there is no cause for worry. The mother should accept the fact and consult her physician as to the proper formula for feeding the infant. While a large proportion of normal infants will do well on various foods, and a few even if fed on adult foods, some will not. It is to avoid unnecessary digestive disorders caused by the wrong feeding of a certain proportion of babies that I feel the young mother should not blindly feed the baby what her grandmother said agreed with her or what a neighbor's baby gets. She should consult her physician and let him assume full responsibility.

Avoiding Constipation

Constipation is a problem that worries mothers almost more than any other single symptom. Constipation is not serious, so do not take measures to remedy it by bringing on a diarrhea which may become serious. Until recent years, and too often now, constipation has been treated by using various laxatives. These tend to activate the intestines chemically and to bring about the desired result, but in a harmful way. The dose has gradually to be increased and often the laxative has to be changed, as the first small dose soon loses its effect. Finally, large doses have to be used until the child become dependent on some drug.

The chronic constipation of many older children and adults is often due to the fact that frequent laxatives were given to them when they were young. This condition can be avoided in a great many cases by proper food, good training habits, a reminder, and a lubricant.

Put the baby down at regular times each morning; when he is a young infant, you can hold him on your lap. At first there is no result, as he does not know why he is put down. It is now time to use the reminder, and an infant size glycerin suppository nearly always serves the purpose. These suppositories are not irritating, are made of grease and are harmless.

Should the movements be hard, it is then time to use the lubricant, such as any of the mineral

oils that are taken by mouth. These merely soften the movements and do not in any way stimulate the intestinal tract or become habit forming.

A Cure for Finicky Eating

Finicky eating is a condition often seen in the first child. Discipline can be gained by training a child to eat what is put before him. Some children are proud of the fact that they will not eat certain foods. There is nearly always a history of trying to urge them to eat. I know of some instances in which a child will eat only when fed by the father, who rushes home from work in order that a few more mouthfuls may be taken.

How unnecessary all this is! Any child can be taught to eat if the environment is normal. Let me suggest a way that rarely fails to break a finicky eater if carried out to the letter. Let us, for example, consider a child 3 or 4 years of age. In the first place one must instruct him that he has been eating entirely too much and that from now on he is going to be allowed to eat only very little.

Limit his milk to eight ounces in twenty-four hours. Place before him at regular meal times "tastes" (approximately one teaspoonful) of his regular food. (Often a heaping plate is enough to make it impossible for him to eat more than a few mouthfuls.) Continue this treatment for three or four days or until the child is ravenously hungry and demands more to eat, contrary to the previous urging to get in each mouthful. Then, gradually increase the size of the tastes, especially of the things he likes the least, keeping him hungry though somewhat satisfied, until he is back on his food in a week or ten days. When he is eating well in from ten days to two weeks after the treatment began, the milk may be increased to a pint and possibly more, if it does not interfere with his appetite for a well rounded diet.

Prevention is better than cure, and a few words may be helpful in avoiding certain digestive disorders, such as vomiting and diarrhea. Before the milk supply was safe and before all milk was boiled, infant digestive disorders constituted a serious problem for all young parents, especially during the summer months.

Warnings of Digestive Disorders

Most of these digestive disorders can be avoided if the mothers are on the lookout for two definite warnings. These warnings are: sudden refusal of food when the baby had been eating well, and one loose movement when movements had been normal. If one of these warnings occurs, immediately stop all food and consult your physician as to when and what to feed the baby. If you do this you will rarely have any serious trouble.

However, if as in some instances the mother urges the baby to eat when he has refused a feeding or gives him a laxative for the bad movement, she is likely to aggravate a mild disorder and produce an illness of several weeks.

I have tried to give a few suggestions for handling some of the simple problems that so often cause worry to the parents of the first baby. While these suggestions apply to the second baby also, he is usually born into an atmosphere less charged with apprehension and so has more chance to develop normally.

Promised *for* August

FOUR representative titles from the August table of contents are listed below:

THE MODERN TREATMENT OF CANCER
By John O. Bower, M.D.

CAMP COOKERY
By Elon Jessop

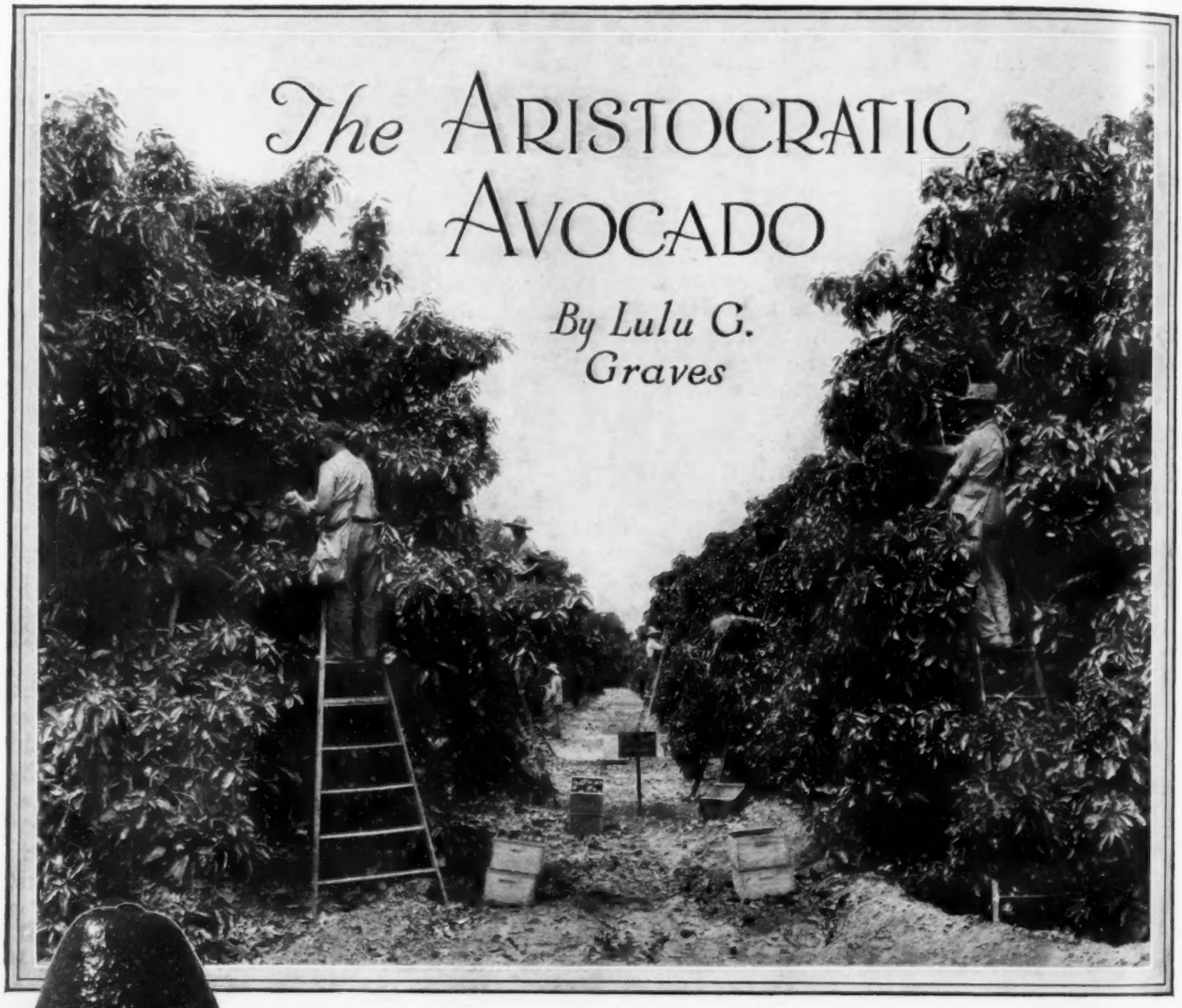
MAD DOG!
By W. W. Bauer, M.D.

TOYS DANGEROUS TO CHILDREN'S EYES
By Louis Lehrfield, M.D.

There will be a dozen other general articles and the usual children's, school, picture, book, and question and answer departments.

The Aristocratic Avocado

By Lulu G. Graves



An avocado grove in California. The avocado is such a delicate fruit that it must be hand picked by workers wearing gloves.

WHEN you see a reference to an avocado, a calavo or an alligator pear, does a wrinkle of perplexity come over your brow? Then you'll be glad to know that these three names belong to one and the same fruit. Although this fruit is a native of Central America, as evidenced by a description of it given by Martin Fernandez de Encisco after a visit to Santo Domingo in 1509, it has been grown in the United States for the relatively short time of thirty years. Its appearance on the markets has been much more recent. Because of its comparative strangeness, it is not surprising that its name should not be well established. Although there are some forty-three names by which the fruit has been called the one in the best usage among Americans today is avocado. This word is derived from the Spanish *ahuacate*, which is probably a corruption of the original Aztec name, *ahuacatl*. What, then, of calavo? Calavo is the name given to the high grade fruit grown in California; the word, calavo (a contraction of California avocado), is a mark of quality and of California origin.

A number of varieties have been introduced into the United States, some by private individuals and some by government explorers. The avocado, botanically, belongs to the genus *Persea*, a member of the laurel family. Accordingly the trees are practically evergreen. If left to their own devices they may grow as high as 50 or 60 feet, but for convenience in picking and spraying they are usually pruned to a low and spreading shape. The blossoms of the avocado are pale green or yellowish and are borne in terminal racemes.

Because of its widespread growth in Central America one would expect the avocado to be a hardy tree, but in this country its location must be selected with care. High winds will injure the tree; therefore lath screens are used for protection or advantage is taken of friendly hills

to break the force of the wind. Extreme heat, especially if combined with a dry atmosphere, injures the foliage. The trees usually require irrigation; they are about as hardy as lemon and orange trees.

The avocado has one advantage over other fruits; it is practically a year round fruit. A tree may be bearing fruit and blossoms at the same time. Some varieties tend to bear three or four times a year. The bearing time depends on the stock from which the tree has descended, the fruit of some trees maturing from August to January and of others from January to autumn.

Characteristics of the Fruit

Because of the different varieties in cultivation, the fruits vary considerably in size, shape and color. The smallest ones may not weigh more than five ounces, while the largest may weigh two pounds. Approximately a pound seems to be the most common size in the market. The fruit is usually described as pear-shaped, but just as many are oval and some are practically round. The color may be yellowish green or may be any one of the many shades between it and a purple so dark that it is almost black. Usually the fruit is thought of as a dark green or olive color. The one seed is large and more or less round. The skin may be very thin or thick and tough, depending on the variety.

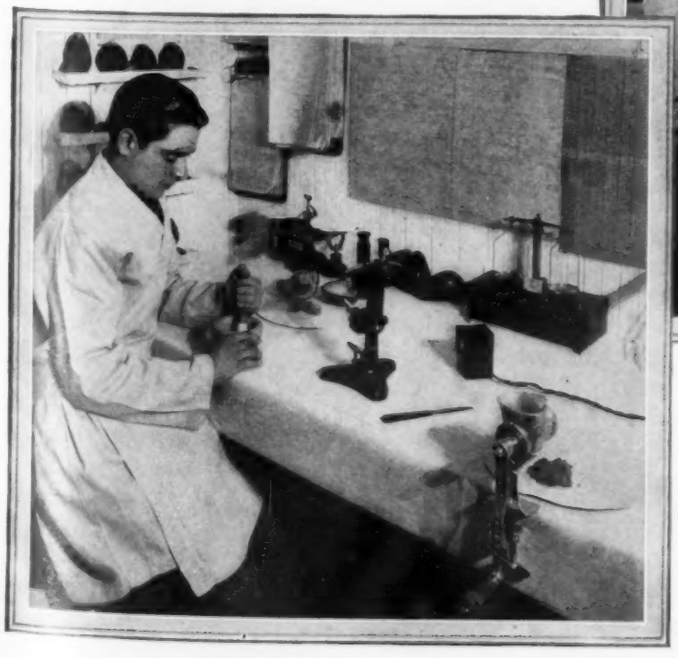
With such a variation in shape and color the person who is inspired to buy an avocado asks, naturally, how to select a good one. Practically the only test is to pick one up and press it very gently; if it gives between the fingers it is apt to be ripe, for the flesh in the ripe fruit is of a buttery consistency. However, be gentle in the pressing process, for the avocado is a delicate fruit and is easily spoiled by bruising. This is so true that the fruit is all hand picked by workers wearing gloves. All sorting and stamping with a trade name is done by hand. The fruit is packed in ventilated, excelsior filled boxes for shipment.

Difficult to Judge Ripeness

The grower, as well as the buyer, has his troubles in telling when the fruit is ripe. If the fruit is purple or black, the color will serve as a sign, but for the green fruit it is necessary to make successive chemical analyses to determine when the fat content has progressed to the proper point for picking; that is, as the fruit ripens, the fat content increases. The variety that seems to be most successful is the hybrid Fuerte, although it has its disadvantages from the growers' point of view, being green, thin skinned and pear shaped.

From a nutritional standpoint, the avocado has a unique position. In the first place, its carbohydrate content is low, about 4.6 per cent. This is one reason the avocado is desirable in diabetic diets.

However, as if to compensate for its delinquency in the matter of carbohydrates, the avo-



All sorting and stamping with the trade name is done by hand. When the natural color of the ripe fruit is green, it is necessary to make successive chemical analyses to determine when the fat content has progressed to the proper point for picking. A laboratory for testing the fruit is shown at the left.

cado is high in fat. This is particularly surprising as practically all fruits (except ripe olives) contain a negligible amount of oil. The avocado contains an amount ranging from 8 to 31 per cent. The average varies, being given as 26.2 by Weatherby and 20.06 by Jaffa. Naturally it will differ with the variety. The oil in the avocado is easily digested, having the same coefficient as butter fat.

Aside from its value in furnishing a concentrated source of energy, the oil in avocados has another value as a carrier of the fat soluble vitamins. This is another reason for its use in diabetes, as well as in tuberculosis and other forms of malnutrition.

The high oil content of the fruit has led to experiments in extracting it, and it has been found that by first drying the sliced fruit an extraction process is possible which will probably be commercially practicable when it is developed.

Excellent Source of Vitamins A and B

As would be expected, the avocado is an excellent source of the vitamin B. If yeast is used as the standard, it has been found by Weatherby that the vitamin B content of one avocado is equal to six cakes of compressed yeast. The average vitamin B content has been established by the same authority as approximately 450 units per pound as compared to apples, peaches, oranges, yeast and lemon juice, which contain approximately 150 units.

Work done on vitamin A at the nutritional laboratory of the University of Southern California established its content as approximately 500 units per pound, as compared to apples 250, orange juice 350, and lemon juice 50.

"The vitamin C and D content of calavos will be determined soon," says Weatherby. "Experimental work on vitamin E has progressed sufficiently far to establish beyond question its presence, though it will require some time yet to get quantitative results."

A table of the mineral content of avocados as compared with apples, oranges, lemons, peaches and strawberries is most interesting, for it shows that it ranks highest in each of eight minerals. Also, the base-forming minerals, calcium, potassium, magnesium and sodium, are present in such high amounts that the reaction in the body is highly alkaline. This factor is most valuable in diets that contain a high amount of protein; by adding avocados to the diet, the fuel value may easily be increased and the alkalinity maintained.

The protein value of the avocado is given by Weatherby as 1.5 per cent and the calories per pound as 1,187. The energy value is high and the protein value is high for fruits.

From this summary of its food value it is obvious that the avocado holds an unusual place among the fruits. It is higher than other fruits in protein content, in calorific value and in minerals. It is of value from its vitamin content. But best of all, it has an unusual, rich, nutty flavor, which is a distinctive addition to the diet.

An interesting new development in the avocado field is a recent report from Hawaii to the effect that a professional baker in the islands has recently perfected a method of preserving them in glass. The inventor, P. Paul Hartmann, has discovered that the avocado cannot be cooked nor can sugar be used with it and that it is not advisable to attempt to can it. His preserving process, which is naturally a secret, seems to be some kind of pickling method. So far, the glasses have not been put on sale in the mainland. For some time the American public will have to depend on the fresh avocado for its supply.

When a ripe avocado—that is, one that yields readily to the pressure of the fingers—has been selected in the store it should be eaten within a day or so to be at its prime. In case part of a fruit is left uneaten, the cut surface may be covered with waxed paper and the fruit placed in the refrigerator. If it should by any chance become exposed to the air and discolored, these parts may be cut away; the rest of the flesh will be fresh and full flavored.

As a Breakfast Dish

The avocado connoisseur cuts the fruit in half and eats it for breakfast as most of us eat cantaloup. He cuts it in two lengthwise, removes the seed and arranges the halves on a salad plate, garnishing it with crisp lettuce leaves or chicory. Then the enthusiast takes his spoon in hand and eats the fruit with only a preliminary salting of it. He may even forego all these formalities and eat out of hand as he would an apple. To the less ardent, a dash of lemon or lime juice or French dressing is usually desirable; in fact a highly seasoned dressing is a good medium in which to introduce this aristocrat of fruits to strangers. But undoubtedly as it becomes better known its best liked manner of serving will be the one used in its native haunts.

The avocado is probably following in the way of the grapefruit and banana. When grapefruit was first introduced on the market, he was indeed courageous who ate it without sugar, and in the initial period of its use the banana was always served with sugar and cream or with some other accompaniment; now both are commonly eaten for their own flavor.

If the avocado is not to be eaten "au naturel," it may be combined in salads, in desserts or served as sandwich fillings.

In combination with cucumbers and tomatoes the fruit is especially delicious. Tomatoes may

be stuffed with a mixture of diced avocado, cucumber and French dressing. Or the avocados and cucumbers may be molded in gelatin, diced and used as stuffing. And of course if the gelatin is a tomato aspic, so much the better.

Another gelatin salad that is effective to both the palate and the eye is composed of maraschino cherries, celery, pineapple and avocados. The cherries are cut star shaped and placed in the bottom of a mold and anchored there by a tablespoonful of gelatin. The diced pineapple, avocados and celery are added in layers and the mold is filled with gelatin. The salad, when cold, is removed from the mold and served on lettuce.

The avocado as breakfast dish or as salad.

One class of salad combines avocados with grapefruit, pineapple or oranges. The avocado is peeled, halved and then sliced crosswise, resulting in semicircular shaped slices. Canned pineapple slices are cut in half and alternate pieces of pineapple and avocado are arranged on the plate.

If grapefruit is being used the sections are freed from membrane and then alternated with the avocado. Oranges are peeled and sliced and the slices cut in half. If orange or grapefruit is used, no dressing is necessary, but most persons like a little French dressing with the pineapple.

Molded Salads

For another molded salad, one that is especially good for making in an iceless refrigerator, chop avocado and celery in the proportion of five to one, mix with mayonnaise dressing and pack in an oblong mold. Pack in ice and salt, let it stand two or three hours or put it in a tray of the refrigerator. Unmold. Slice and serve with French dressing on a bed of shredded lettuce leaves.

At the beginning of the meal, the vegetable soup may contain diced or mashed avocado.

For a cocktail, dice the avocado and mix it with tomato catsup and lemon juice. The avocado may also be mixed with half as much diced celery and placed in the glasses. For a sauce, mix one half cup of mayonnaise, three tablespoonfuls of cream, two tablespoonfuls of chilli sauce, one tablespoonful of lemon juice, two drops of Worcestershire sauce, three drops of tabasco, and salt to taste. Pour a small amount of the sauce over each cocktail.

At teas or parties the avocado may take its place as a sandwich filling. Perhaps the simplest variety is made by mixing mashed avocado with salt and lemon juice to taste. Mayonnaise may be added if desired. But for a really fancy filling, add shredded ripe olives and minced cucumber pickles to the filling. This is especially good on whole wheat bread, and if the bread is toasted and served as an open sandwich the effect is unusually attractive. Minced parsley, green peppers or pimento may be scattered over the top of the open sandwiches.

As a Dessert

An avocado may be served with cream and sugar for dessert if desired. Another dessert is made by soaking one tablespoonful of gelatin in one-fourth cup of water and dissolving it in one and one-fourth cups of boiling water. Mash half a medium sized avocado, add one half cup of orange juice, two tablespoonfuls of lemon juice and one third cup of sugar; add to the gelatin solution and cool. Whip a three-fourths cup of cream and fold into the gelatin mixture. Mold and serve with or without whipped cream.

A number of other ways of using this fruit have been worked out, but those given here will serve to indicate the types of foods that can be made from it. Of one thing we are sure, that any dish made from it will have about it the air of a delicacy.

HYGEIA
THE HEALTH MAGAZINE
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Plain Facts about Health and Disease

THE MENTAL SIDE OF GOLF

THE great problem of Americans today is how to consume the leisure that the development of the machines, the five day week, higher wages and good roads have conferred upon them. The answer to the problem is probably golf. The increasing number of farms that have broken out with bunkers and sand traps and water holes is an indication of the completeness of the answer. The growth of the golf courses has developed a great mass of personnel including caddies, professionals, greens keepers, trap smoothers, weed eliminators, locker-room boys, attendants and golf psychologists. Of all the accessories the latter might seem to be least important.

Actually the golf psychologist makes the difference between success and failure in this irritating sport. He is the expert who tells you why you look up and swipe the ball from memory, why you drop your shoulder or raise it, why you stand on your heel instead of your toe, why you fail to see the line from the ball to the cup, why you put six successive sinkers in the water, why you blow up. After you find out the answers to these questions you may be able to play better than you did previously. It all depends on whether or not you are able to adjust your habits of thought to your new knowledge.

In a recent volume on "The Mental Side of Golf," Charles W. Moore emphasizes the importance of habit and practice in developing golfing skill. Practice means a lot, provided the practice is right, and imitation means much, provided the thing imitated is correct for the person doing the imitating; emotions more than anything else are responsible for missed putts. The reader might think from this essay that its writer plays regularly around ninety. That would be, however, an error. A good psychologist is not necessarily a good golfer. The writer's score averages a hundred and ten.

DENTAL QUACKERY

THE story of dentistry and of dental quackery is as old as that of mankind. In the middle ages dental charlatans traveled from city to city, pulling teeth without the slightest conception of the relation of the teeth to the human body. The modern dentist, trained in the fundamentals of medical science, realizes that the mouth and teeth constitute but one portion of the living organism and that anything that affects the mouth and teeth may easily affect the entire organism.

Just as medical schools began to develop in this country as proprietary institutions conducted for the advantage of their owners, so also dentistry began with commercial education. It never reached perhaps the degradation in the sale of diplomas that has been a feature of medicine and of the healing cults, but diplomas were sold in dentistry as cheap as $10. From the first, however, in the field of dentistry as well as in medicine, constant battles occurred between the representatives of truly educational institutions and the proprietary schools.

The dentists, depending as they do on a vast mechanical armamentarium, were exploited in many ways, however, to which medicine did not easily lend itself. Distributors of dental merchandise constantly fought attempts to raise entrance requirements and to advance dental education, so that today dental education is still from ten to twenty years behind medical education in the fundamental sciences. In many instances the distributors of dental merchandise located their establishments within the actual walls of the dental colleges so that it

became necessary to point out that such contacts were undignified, unnecessary and unprofessional, and that it is not safe for any healing profession to take its guidance from the distributors of accessories.

Scientific medicine, through the American Medical Association with its council on pharmacy and chemistry, established in 1905, has waged successful warfare against attempts of pharmaceutical houses, specialty manufacturers and the distributors of patent medicines to dominate medical practice. Dentistry has, however, betrayed a sad weakness in resisting commercial cajolery. Even today dentists continue to lend themselves to the distribution of advertising and the promotion of unscientific dentrifices, mouth washes and similar proprietary preparations.

It is encouraging that within the last few years the American Dental Association has made considerable advance in this connection. A chemist has been employed and has taken his fundamental studies in the laboratories of the council on pharmacy and chemistry of the American Medical Association. Already a half dozen mouth washes, pyorrhea cures, combinations of salts, and remedies for pain have been analyzed as to their content, claims considered by authoritative clinicians and the dentists of the country informed as to the lack of virtue.

A preparation guaranteed to remove mucin from the teeth is found merely to be an alkaline solution about as good as baking soda. Another preparation guaranteed to eliminate tartar was simply a weak solution of hydrochloric acid, not a great scientific discovery but an absolute menace, encouraging disintegration of the tooth enamel. Another preparation for the removal of tartar was found to be merely grit and one might as well rub his teeth with pumice stone or sand paper. Iodine, a preparation of tremendous interest, has been urged on the profession as the basis of a pyorrhea cure and of tooth pastes, when the amount of free iodine available was not sufficient to have any effect in the mouth and when even this was so quickly converted to the iodide salt as to be without value.

The charlatans have not been satisfied with the exploitation of such simple solutions. They have attempted to confuse the untrained dentist by combinations of mineral salts with weak antiseptics, making for these things claims in the field of physical chemistry that to any biologist or physiologist represent the height of the ludicrous.

A so-called synthetic saliva exploited as a cure for pyorrhea by a charlatan who had previously exploited three other pyorrhea remedies was found to be merely a mixture of table salt, baking soda, chalk, magnesia and starch, flavored with essential oil, and vaunted as the exact duplicate of the human saliva. The ferments of saliva were absent, but even were this not the case, it has not yet been shown that saliva will cure pyorrhea. Ten cents' worth of these common salts put up in fancy packages with sufficient claims on the label bring to the exploiter the sum of $1 and guarantee to him a tremendous margin of profit.

Recently, in connection with another war on the medical quacks, the Chicago *Tribune,* aided by the Chicago Dental Society, has opened a new campaign against the quack dental advertising office. For this the *Tribune* merits the commendation of every one interested in the advancement of dentistry as a science and indeed in the aiding of public health. The quack advertising office in dentistry is a menace for many reasons. In the first place, money is to be made only by the standardization of the procedure. Hence persons are fitted with standard plates, teeth, bridges and similar dental devices that are not suitable to the peculiar construction of their own oral cavities. Persons who know the dangers of rough teeth and of badly fitted dental accessories in relation to the chronic irritations that produce cancer see in such standardization only a great menace.

Obviously the money that is made in the quack advertising office depends on the ability of the salesman to sell to the individual client not the service that is necessary but the maximum of service yielding the greatest percentage. Hence gold crowns and rubber plates are the important products in these offices. Every effort is made to make the case conform to the goods to be sold, not to fit goods to the case.

Furthermore, the commercialization of dental practice through such offices brings promptly into the picture the payment of the operator not only of a salary, which is a minimum salary, but also a commission on the amount of work done. Hence he attempts to sell more and higher priced dentistry rather than scientific and minimum priced dentistry. In this field, as in perhaps every other field of human relations, the best and the scientific are always the cheapest.

Dentistry, like modern medicine, suffers from an attempt on the part of big business to commercialize practice. The changes in this direction in medicine are already being fought by those who have at heart the welfare of the public. Dentistry like medicine is beginning to suffer with superspecialization. The great con-

flict in the future in the determination of the form of practice will be the conflict between individual care and mechanized and socialized cars.

Medicine has been able to resist to some extent commercialization and mechanization of medical practice, because it has been the belief of every great practitioner of medicine that the intimate relationship of physician and patient is fundamental to scientific care. Dentistry is facing the same problem. Only so far as commercialization and business methods for promotion can be controlled will dentistry continue to advance as a science.

SHALL CHILDREN EAT SWEETS?

THE average grown person eats from 3,000 to 4,000 calories a day. This provides him with the energy necessary to carry on his daily activities. The child one year old requires about 1,000 calories to carry on his activities. True, the basal metabolism of a man of 154 pounds is such that he needs about 1,700 calories in twenty-four hours, and a young woman needs about 1,400 calories; but it is always necessary to add on a few hundred extra calories to provide for extra activity, including the energy associated with digesting and getting rid of the food. Thus, authorities arrive at a variation of from 2,000 to 2,300 calories a day for men at rest but sitting most of the time, to from 4,000 to 6,000 for those doing work requiring strong muscular action.

As the child grows older, his muscular activities increase and he requires more energy-producing food. Between 3 and 4 years of age he needs from 1,100 to 1,400 calories and between 8 and 9 years of age he requires from 1,600 to 1,900 calories a day. The boy from 15 to 17 years of age requires from 2,700 to 3,400 calories a day, as any mother or any boarding school keeper will verify.

The selection of food requires a consideration of all the important elements that enter into food substances. These are proteins, carbohydrates, fats, mineral salts and vitamins. Air and water are not included in this list, since they are taken for granted. As Dr. Henry C. Sherman points out, the housekeeper does not buy so much protein or so much carbohydrate a day for the family. She shops for bread, meat, milk, fruits, vegetables and similar articles of diet. She buys pastries, candy, delicatessens and what not. She is compelled to take into consideration not only the provision of energy and body-building materials but also the question of appetite, variety of food, palatability, and similar factors which are as psychologic as they are physical.

Coupled with the psychologic factors that are considered by the shopper so far as they concern the people whom she must feed, there are the psychologic impressions that are being made on her by the people who have something to sell. Nowadays advertising goes far to determine the national appetites. One is told to "reach for a — instead of a sweet," to "reach for an — — and a sweet" and to "avoid —" entirely. One is told to eat more of this, that or the other product because some one is anxious to encourage the sale of the product. It is high time that children begin to learn something about the digestion and about the foods that enter into the process.

In an essay on "The Problems of Sweets for Children" in the *Child Health Bulletin*, published by the American Child Health Association, Professor Sherman reiterates the important point that has been emphasized again and again: that the selection of a diet should guarantee first the substances that are essential to the human system. The most important of the protective foods is milk, which makes good the mineral and vitamin deficiencies of the breadstuffs. The dietary should be built around bread and milk, with fruits and vegetables occupying the places of next importance. Eggs stand midway between milk and meat. Meats provide protein or fat or both. Breadstuffs and other grains make up the largest and cheapest source of calories and protein.

Now the problem that is agitating a good many people today is the question of the use of sugar and of sweets in the diet. Sugar is carbohydrate and as such a good source of calories or energy. It has been seen that the average person requires a certain number of calories each day. Two tablespoonfuls of granulated sugar will yield 100 calories. A cubic inch of chocolate fudge has three fourths of its calories in sugar. The average annual intake of sugar in America is 105 pounds per person, or well over a quarter of a pound of sugar a day. Obviously this is not all taken in the form of sugar pure and unadulterated. Nobody sits down and eats a quarter of a pound of sugar at a single sitting, although not infrequently at an afternoon party a woman will eat a quarter of a pound of candy of which three fourths is sugar.

The chief reason for sugar in the diet is of course to add palatability to tea, coffee, cocoa, breakfast cereals, stewed fruits, cake and cookies, pies and puddings, and even salads. The stewed vegetables served in most restau-

rants are pale, tasteless remnants of the beautiful foods taken from the soil. Without sugar and condiments these are in many instances uneatable. Hence all authorities on diet recognize the importance of sugar and its usefulness. On the other hand, the unregulated eating of candy is a menace to the growing child, not because candy as such is harmful but because the craving for candy interferes with the eating of the food substances which are absolutely necessary and which candy, however modified, does not supply.

That clever writer on the subject of food, Mary Swartz Rose, puts the case plainly: "Sugar creates an appetite, not for other foods but for itself. The candy eater asks for more candy, not for bread and butter; the cake eater scorns the innocuous mildness of junket. Children who are allowed to eat candy whenever they feel like it are likely to be undernourished because the candy spoils the appetite for the foods they need for growth."

Professor Sherman interprets the proposition with the words: "Thus sugar is essentially a bait, or, in Bunge's words, 'not only an aliment, but also a condiment, and easily lends itself, as all such things do, to abuse.' "

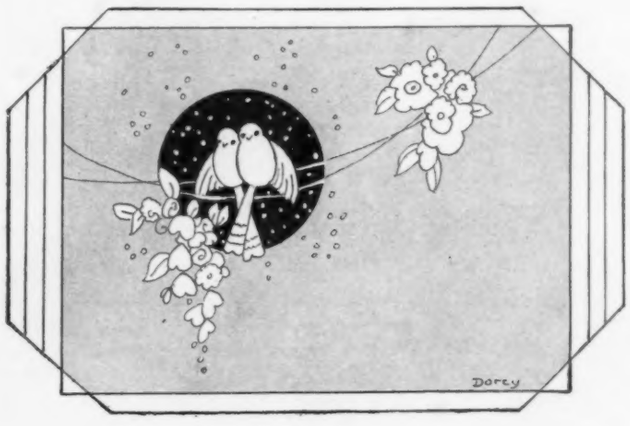
The statements that have been made here have been made again and again in articles on nutrition published in HYGEIA. If human beings in general could think and act rationally there would be little need for the repetition. We tend, however, to think along single lines and to carry one idea at a time. A craze for reducing sweeps the country; sugar, starch and the foods that contain them become tabu and great industries that have grown up in response to previous public demand begin to suffer. In response to their difficulties they begin, by advertising, to change the public point of view and to shift the demand.

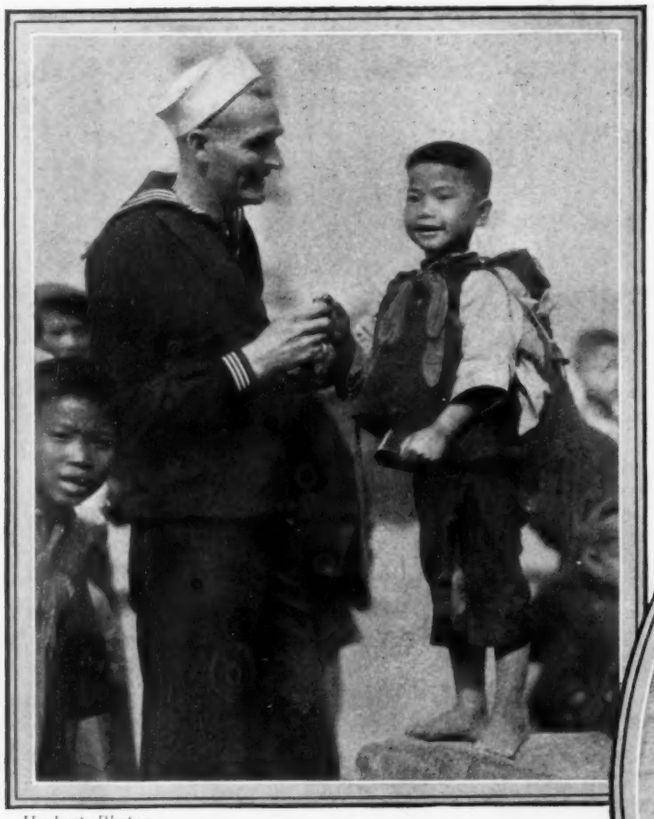
Like a pendulum the public demand always swings not to the middle point but beyond the point to an extreme. Full page advertisements for candy, for sugar, for sweets, generally arouse the ire and the fears of the dietitians and the dietary authorities, and they begin a campaign to force the pendulum back to the center.

The truth is that some sugar is desirable in the diet, that a little jam and some ice cream and some sweetened stewed fruits, and a little sugar on the cereal have a helpful place in the child's diet. A piece of candy or two for an adult helps to polish off a meal and gives a sense of satisfaction, and a piece of candy or two taken just before a meal quite promptly kills the appetite for most of the food that may be offered.

Sherman says that in general the proper place of sugar in the food supplies and eating habits of children is not in such concentrated forms as candy, nor in the indiscriminate and excessive sweetening of all kinds of foods, but rather as a preservative and flavor to facilitate the introduction into the child's dietary of larger amounts of the fruit and the milk, the importance of which to child health has been increasingly emphasized with each year's progress in our knowledge of nutrition.

With that fact in mind candy may still be used as a delicacy, a pleasure to the palate for special occasions. For the young man calling on the young lady of from 16 to 26 in the month of June, it will probably continue to be the package with which to charm.

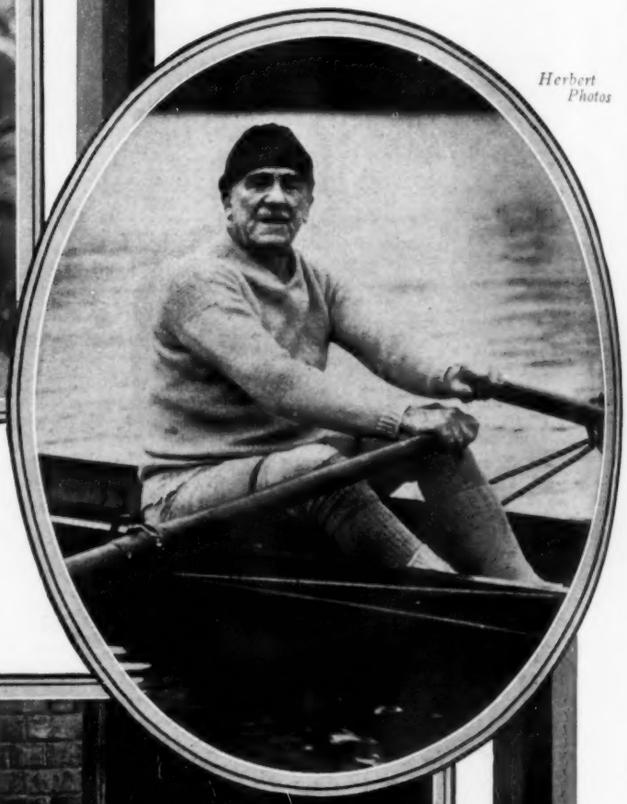




Herbert Photos

SAILOR GREETS "LITTLE FATHER"

An oriental institution is the "little father." The older boys in Chinese families care for the younger children, and a convenient way of performing that duty is to strap the baby onto the "little father's" back.



Herbert Photos

OLDEST OARSMAN

Prof. Emeritus Charles R. Lanman of Harvard University has for forty-nine years, in season, enjoyed sculling on the Charles River Basin. At 79, he still rarely misses a day, and his 11 foot shell is a familiar sight on the Basin waters.

Wide World Photos

HUNDREDS OF PRIZES FOR THEIR RIDING have been won by the six Edwards children of Shropshire, England. In age, they range from 6 to 18.

Pacific and Atlantic

PRINCES AT PLAY

Prince Peter, heir apparent to the throne of Jugo-Slavia, and his little brother Tomislav are out for a ride on the grounds of the royal estate at Belje. The side-car device would seem to be the latest in small-brother conveniences.

H. Armstrong Roberts

ABLUTIONS AT CAMP

Shampoos are the order of the day at this summer camp for girls. Arrangements at this camp are not nearly so convenient or so sanitary as those provided at "Wah-wah-le-nah," the ideal camp described by Dr. Clow earlier in this issue.

Pacific and Atlantic

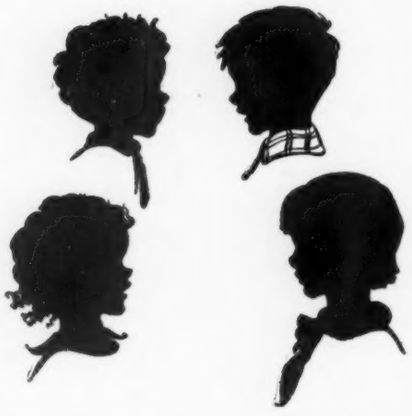
GIRL SCOUT BABIES

The first girl scout troop of Massachusetts recently held a reunion. Honored guests of the occasion were several babies whose mothers twelve years before were charter members of the troop. Healthy looking offspring, are they not?

EVERY CHILD'S TREASURE

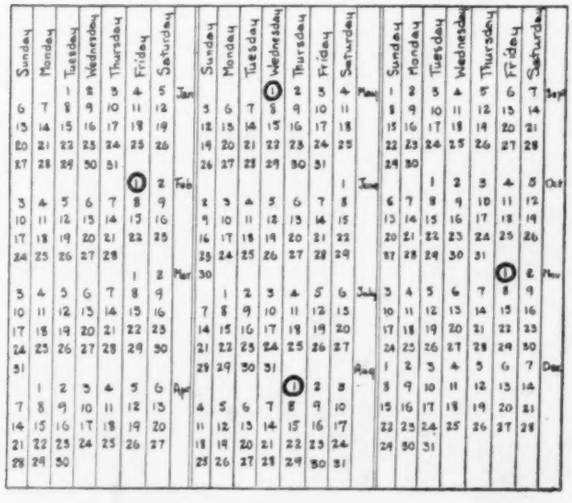
By Sarah McGiffert

Illustrations by Ann Van Nice



THIS story is about John and Mary White and Bob and Helen Brown. Their families are next-door neighbors and the children are all in the same school.

One day Mrs. White said to her children, "The calendar on the kitchen wall says that it is time for us to visit the dentist. Shall we go to Dr. Howe's office today?



Their calendar looked like this. It had circles around dates to tell them when it was time to visit the dentist. Their mother wanted them to have nice teeth and she knew that unless little children visit the dentist very often their teeth sometimes get big holes in them. Teeth of young children are so soft that the holes come quickly.

So off they started for the dentist. You see, they liked Dr. Howe and visited him so often that they knew him well. Dr. Howe said, "Good morning, children. I am very glad to see you. It is nice to have such pleasant people come to see me." First he looked at Mary's teeth.

"Hello, here is a little bit of a hole. It is a good thing I caught that, because if I fill it now it will not hurt much, and filling it will keep the hole from getting bigger.

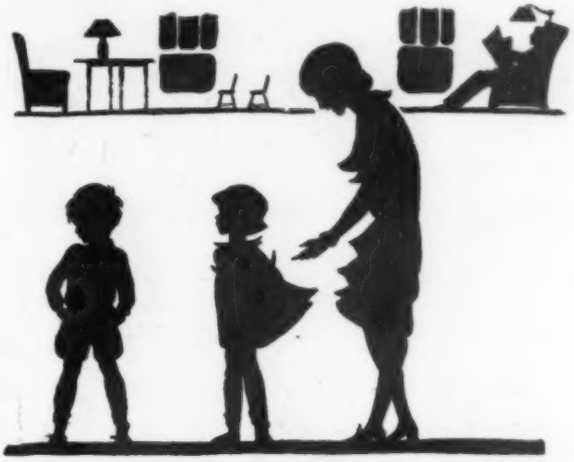
"I am going to clean your teeth thoroughly, too, because even though you brush them well each night and morning they need my kind of a cleaning every few months."

When Mary was all through she said, "My, how good and smooth my teeth feel! I always like them best just after I have been to see you."

Nor did it take long for Dr. Howe to finish his work for Jack, and how good they both felt when they left his office and knew that their teeth were all sound and clean. As they

left Dr. Howe said, "Don't forget to brush your teeth well every morning and every night, and come back to see me in another three months." They promised that they would and started off to play.

On the way home Mrs. White met Mrs. Brown, who lived next door. Mrs. White said, "My children have just been to the dentist to have their teeth looked over and are all through for another three months." Mrs. Brown said, "My children should go to the dentist too. They haven't been there for a long time—I don't know just how long, but it is hard to get them to go!" Mrs. White said, "John and Mary really like to go. They have gone since they were 3 years old, and they like Dr. Howe."



That evening after dinner Mrs. Brown said to Bob and Helen, "Next Saturday morning we shall go to see Dr. Howe and ask him to look at your teeth and tell us if they have any holes in them." Mr. Brown said, "Yes, I wish you would go. If your teeth get much worse there will be so much to do that we shall have a large bill to pay."

Bob said, "I don't want to go. I hate a dentist, and besides I haven't any holes in my teeth."

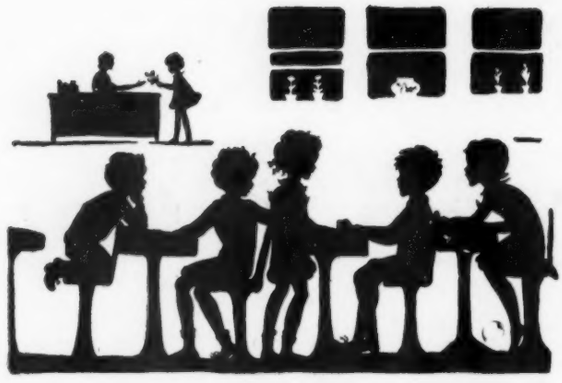
Helen said, "My teeth don't ache, and I don't see why I should go."

Said Mrs. Brown, "It seems to me that your teeth do not look as clean as they should. Do you clean them well?"

Bob said, "Sure." Helen said nothing. That night it was quite late when they went to bed. Bob said, "I will race you to bed," and Helen said, "I'll be there first."

They slipped out of their clothes and clambered into bed without once thinking of their teeth.

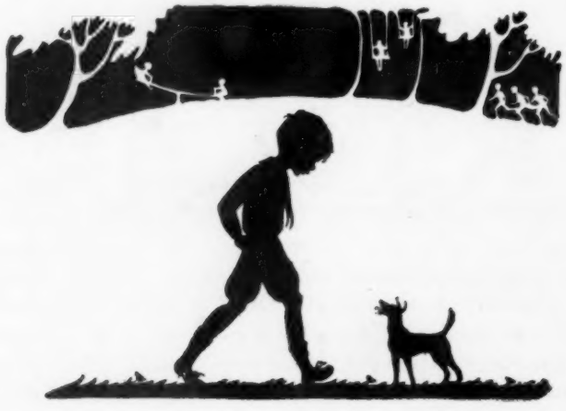
In school the next Monday Jack and Mary told the children about their trip to the dentist.



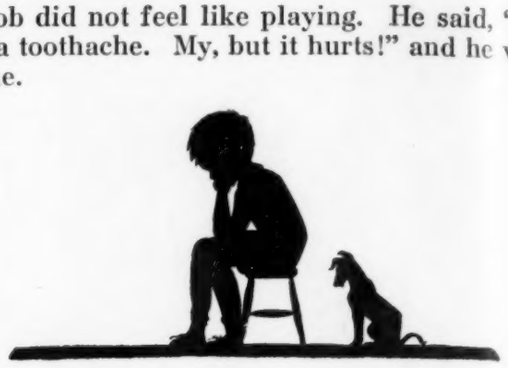
Their teacher said, "Your teeth look beautiful. Clean teeth certainly make a person much better looking. It is nice to see you smile."

Bob and Helen looked very sober and tried not to smile so that they would not show their teeth. They kept their heads down over their books.

After school the children all went out on the playground for their usual group games.

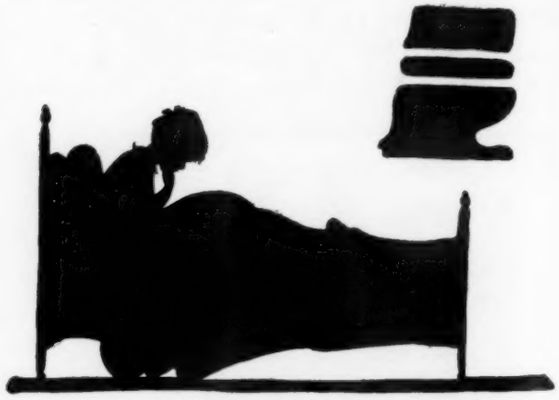


Bob did not feel like playing. He said, "I've got a toothache. My, but it hurts!" and he went home.



Poor Bob, this is the way he spent that whole beautiful afternoon when all the other children were having such a good time.

When Bob's mother saw him she said, "Now we must go to the dentist," but Bob said, "I don't want to go. It hurts too much, and I won't let the dentist touch it." That night he could not eat any dinner.



His tooth kept him awake all night so that he was too tired in the morning to get up, and he had to stay away from school. He cried very hard because he was tired and his tooth ached badly and he had not been able to take a bit of food for so long.

Bob's mother had a hard time with him, but finally she got him dressed and they started out to see the dentist.

The trip to Dr. Howe's was not a pleasant one for Bob could think of nothing but his tooth.

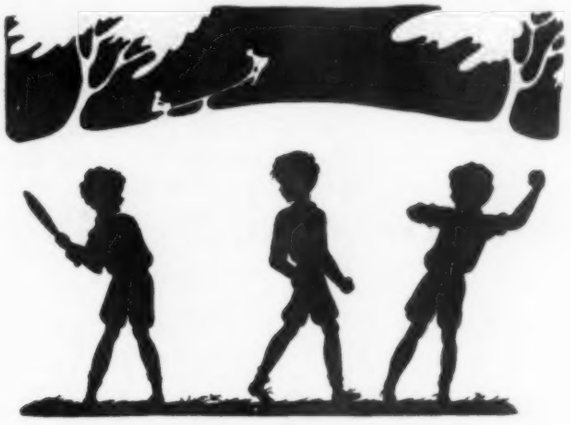
Dr. Howe looked at the tooth and said, "I don't wonder it aches. That is a bad looking tooth. It is a valuable big six-year molar. You haven't been here for so long that the hole is very large, and I am afraid I cannot help hurting somewhat. I shall be as careful as I can."

So he put in some medicine and worked very carefully. After a while it was filled, and Dr. Howe showed Bob a picture, like the one above, and told him why his six-year molar is so important. It must be watched carefully, because if anything should happen to it no other tooth will ever grow in to take its place. Dr. Howe told Bob that the way to find the six-year molar is to count six teeth back from the center of the front, and there it is. Bob found that he had four of them.

Dr. Howe said, "If you don't want any more toothache you must come back until all the holes have been filled." So Bob said he would come again and went sadly home.

Bob felt so miserable that he had to stay away from school for several days.

When he went back to school Bob found that he didn't know the work or the songs and games that the other children knew. His teacher said, "I was sorry you had to be out of school. When you are not here you cannot learn as well as the children who come every day."

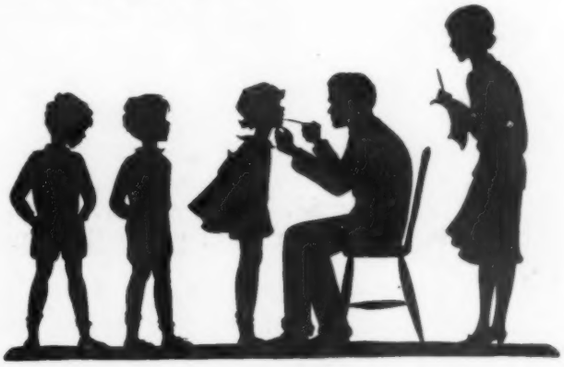


After school, instead of playing with the children, Bob had to go back to the dentist again.

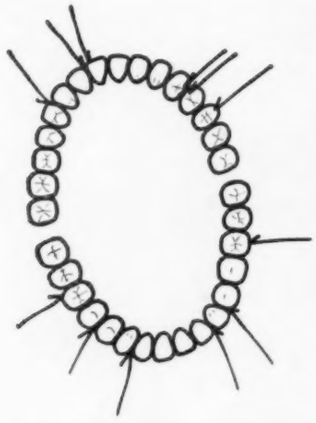
Dr. Howe said, "I am sorry that you are having to come so often, but it is because you let your teeth go for so long without visiting me and there are so many big holes."

Bob said to Dr. Howe, "After this I am coming to see you every three months, the way John and Mary White do. When my teeth are all cleaned and fixed they feel fine."

He told Helen that she had better go to the dentist too, but she knew that she had some big holes in her teeth and that if she went it would take much of her play time. She told her mother she would wait a while longer, and each day when her mother wanted her to go she acted cross and disagreeable.



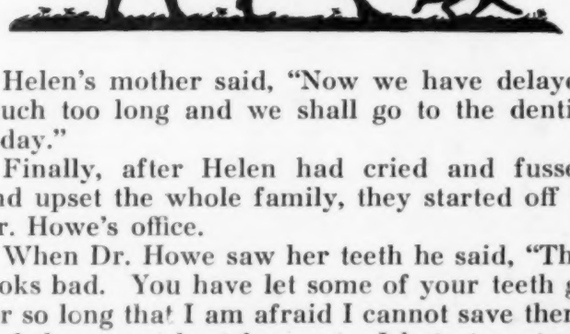
Finally one day a dentist came to the school and looked at all the children's teeth. The boys and girls in each row stood in line for the examination. When he came to Helen, he said: "This is too bad. Here is a six-year molar with only the shell of the tooth left."



Helen said, "But it doesn't ache." The dentist said: "No, that is the trouble. They do not always ache, and sometimes they are so far gone before they ache that they must come out. You must see your dentist right away."

That frightened Helen, but she thought, "I shall not say anything about this at home because my tooth does not ache and I certainly do not want to go to the dentist." But

in a few days a notice was sent to Helen's mother saying that her teeth had big holes in them. The notice looked like the one above, and each check showed where there was a hole.



Helen's mother said, "Now we have delayed much too long and we shall go to the dentist today."

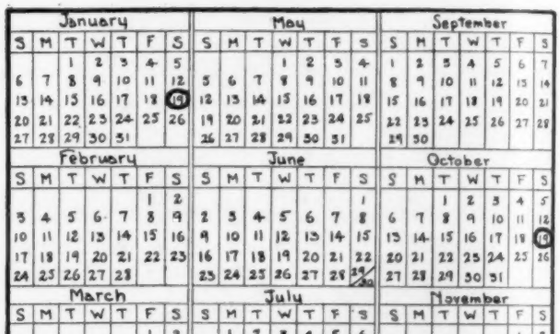
Finally, after Helen had cried and fussed and upset the whole family, they started off to Dr. Howe's office.

When Dr. Howe saw her teeth he said, "This looks bad. You have let some of your teeth go for so long that I am afraid I cannot save them, and they must be taken out. I hate to extract the teeth but it is my only course."

Helen's mother felt sorry, and Dr. Howe said, "If Helen had come to me when the hole first started, I could have saved the teeth. Taking out the first teeth before it is time for them to come out sometimes makes the other teeth come in crooked and changes the shape of the mouth."

He showed Helen a photograph of a girl whose teeth came in crooked because the first ones had to be taken out too soon, and the girl had spent many months having them straightened. It all happened because she had not visited the dentist on time. This is the way her mouth looked because of her crooked teeth.

That night Helen and Bob said, "We shall never again wait so long before having our teeth cared for." Their mother said, "Come, let's put marks on



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the calendar to show just when to visit the dentist." So they marked it like this.

Bob said, "Of course our teeth will never be as nice as Jack's and Mary's because they have always taken care of theirs."

In school they learned that there was a right and wrong way to brush the teeth and that the teeth should always be brushed from the gums toward the grinding surface.

Here is Mary showing her little brother how to brush his teeth. A good tooth paste and dental floss are a help to keep them clean. The children also learned at school that certain foods contain good teeth-building materials. The best foods are milk, vegetables, fruit and whole cereals.

Some people think that the eating of too much candy and too many soft foods is a reason why teeth do not last.

Things To Do —

Visit the dentist every three months
Brush the teeth well every night and every morning
Brush from the gums toward the chewing surface
Use a good tooth paste and dental floss
Never bite thread or crack nuts with the teeth
Never make a fuss about going to the dentists
Eat tooth-growing foods — a quart of milk a day,
Vegetables like cauliflower, spinach,
celery, lettuce, carrots —
Fruits like oranges, pineapple, figs.
Any cooked dark cereal which is made
from the whole grain —

Jack and Mary and Bob and Helen decided to list all the things that must be done to keep the teeth nice. That is what is shown above.

WHINEY and PINEY

ONCE there were a twin brother and sister whose nicknames were Whiney and Piney. Their mother went away every day to earn money for food and clothes. The twins did not need much food or clothes because they didn't feel well enough to eat much.

One evening Cook said: "Whiney and Piney ate nothing but jelly roll today. They wouldn't go outdoors. They sat in the window and watched the next-door boy."

"He is a country jake," Whiney told Mama.

"Cook says his cheeks grew in an apple orchard," Piney told Mama.

"Why don't you twins go out and play?" asked worried Mama.

"We're city jims," said Whiney.

"We can't play country games," said Piney.

After school next day the next-door boy beckoned and the twins went out to play with him.

"Are you a country jake?" asked Whiney.

"You're so round and rosy," said Piney.

"Ha, ha, ha," laughed Jolly. "I'm a city jim, because I was born right in New York. I'm round and rosy, because Dr. Laffalot makes me eat a lot."

"We never eat a lot," said both twins together.

"If you don't eat a lot you'll never be good ball players or good school goers," said Jolly.

"We don't like games," said Whiney.

"We don't like school," said Piney.

"I don't like you!" cried Jolly, and ran home.

The twins went to their house in tears.

Jolly told his mother about them. Mrs. Kindone came to call on Mrs. Worried that very evening.

"Jolly says your little boy and girl aren't well," said she. "Do take them to Dr. Laffalot."

Mrs. Worried took a day off and went with the twins to a shiny, white office down town.

"Underweight," said Dr. Laffalot and didn't even smile. "Undernourished, crooked joints. Why don't you eat enough?"

"We don't like to eat," whined the twins.

"Rubbish, "said the doctor. "Don't you want to grow up and take care of mother?"

"Yes," whispered the twins.

"Bacon and eggs with plenty of cereal for breakfast," ordered the doctor. "Two quarts of milk, two oranges and cod liver oil besides your other meals. Come every month so Miss Smiley can weigh and measure you and make a map of how you grow. Play outdoors all day! Wear frog clothes when it rains."

Mother bought green rubber coats and green rubber hats and green rubber shoes for the twins.

Next day it rained. Two frogs played in the yard waiting for Jolly. At last he bounced out of his back door.

"Look at the frogs!" he shouted. "I'm a toad because my rain clothes are brown. Let's play leapfrog."

They needed a lot to eat that dinner time.

"I do declare," said Mrs. Worried, "I see a bit of rosy roundness coming!"

After a month they went to Dr. Laffalot's office to be weighed and measured.

"A whole pound and a whole inch for each," smiled Miss Smiley as she marked their charts.

And each month thereafter the inches and pounds climbed and grew. —HELENA CARUS.

HEALTH *and the* SCHOOL

Edited by
J. Mace Andress, Ph.D.
67 Clyde Street, Newtonville, Mass.

Education in Good Posture

EVERY course of study on health and every modern textbook on hygiene emphasizes the importance of good posture, and everybody now realizes that good posture is a distinct asset. First, good posture makes for good health. The body is an intricate machine with a number of delicate and vital organs. If they do not have sufficient room for growth and work it is impossible for them to function properly. As a result the body as a whole will deteriorate. Second, the person who walks and sits correctly not only feels better and acts better but looks better.

The person with erect posture is unusual. He commands immediate and favorable attention in a crowd. This is not only a source of satisfaction to the one having good posture but also enhances his influence with others. Thus it builds a stable foundation for successful living.

Is Matter of Habit

Posture is not only a cause but a result. The body like a building depends on the integrity of the materials from which it is made for its form and stability. Children who are malnourished, who do not eat a nourishing diet or get enough sleep, who suffer from fatigue, acute eyestrain or other physical defects are likely to have poor posture. The poor posture is a symptom of a variety of physical ills. On the other hand, it is a cause and tends to aggravate these physical symptoms and promote further ill health. The prevention of poor posture and the promotion of good posture is fundamentally a matter of insuring good physical health. Undue fatigue should be eliminated, a proper diet provided, physical defects removed and the requisite amount of rest, sleep and wholesome activity need to be made a part of the daily routine.

Posture is also a matter of habit. There is a science of bodily mechanics. Everybody should be familiar with the fundamental principles and should master the essential habits of good posture. Children in every department of the school should be trained to sit, stand, play and work according to the principles of the science of bodily mechanics.

Mechanics of Posture

The projects presented in this number of HYGIEA deal with the subject of teaching the mechanics of good posture. The projects are the result of a problem given to classes in the Boston School of Physical Education. Groups of students were asked to work out these practical plans of teaching poise and posture as positive health habits to children in the grades. It is hoped that they may be suggestive to other teacher-training schools of physical education and that grade and high school teachers may find in them some suggestions.

The editor of this department, himself an instructor in the Boston School of Physical Education, wishes to thank the director of the school, Miss Mary F. Stratton, for her cooperation in planning this issue. The making of the posters and the preparation of the projects, all tried out in actual practice, were carried out under the able supervision of Miss Esther Wilson Klein, instructor in the school.

A student posture poster.

TEACHING HEALTH

An introduction to a series of projects on teaching the mechanics of good posture.

WHETHER we consider the subject of the posture of school children from the standpoint of efficiency in body control as a purely mechanical problem or of appeal to the imagination through our sense of beauty in the grace born of this control, consciousness of its importance grows with study and discussion.

As the strongest appeal to public interest formerly was made by the medical profession, members of which believed faulty posture to be a real cause of certain physical defects, the cure was clinical in method. The child must be "corrected," and from this grew the term "corrective exercises," which has prevailed quite universally. That most of these exercises were good, there is little question. That the clinical method of the corrective class left many children in an indifferent attitude of mind is equally true. The mere fact of being segregated because the pupil was different from his fellows robbed the teacher of the cooperation on the part of the pupil that makes for the best results. Children do not particularly like to be different.

It is my belief that only as many children have been taught to stand correctly and to use their bodies efficiently as have been persuaded to wish to do so. Too many exceptions that prove the rule can be cited to make it possible to convince the child or the lay adult of the dire consequences to one's physical mechanism if the crooked spine and sagging muscles persist into middle life. Also, we do not fear the future pains from poor digestion or future aches in feet and back. The appeal must be made through the imagination with its

light turned on the present needs, desires and ambitions of the individual.

It is well that the teacher should understand clearly certain fundamental facts: that a foot wrongly dressed and wrongly used will break as surely as the arch of a bridge will break if its alinement is crooked; that from this cause may grow weakened knees and strained backs; that flabby abdominal muscles and a wrongly balanced pelvis will lead to sagging vital organs with consequent harm to digestive and reproductive functions; that a flattened chest and a drooping head mechanically interfere with the circulatory and respiratory systems. Herein lies the medical reason for enlisting the help of the teacher. The reason should be explained to the pupil as well but should merely be explained, not reiterated day after day to the healthy child to whom most aches and pains are fortunately unknown.

Should we not, on the other hand, link the positive point of view with the interest of the child, carry the training into each activity that holds the attention of the pupil, appeal to whatever ambition we may be able to discover and let the sense of being well poised add to the inner satisfaction of deeds accomplished?

Are we not also learning to appreciate beauty of movement as well as beauty of face and form? No one can deny that there is an age at which this appeal to beauty will influence girls when dire prophecies will leave them cold and indifferent.

The suggestions that follow are the result of a problem given to our classes in which they were to appeal to the grade school pupil in an effort to inculcate posture and poise as a positive health habit.

MARY F. STRATTON
Director, Boston School of Physical Education.

EXPLANATORY NOTE TO TEACHERS

THERE are six counts of posture. *Count I* is feet parallel; that is, the toes are pointing straight ahead and the inside lines of the feet form parallel lines with each other. *Count II* is weight forward; that is, instead of the weight being back on the heels or far forward on the toes, it is just in front of the ankle joint. *Count III* is knees easy. This means that the knees are slightly flexed and not hyperextended. *Count IV* is the pelvic tilt. To do the pelvic tilt, you must pull in on your waist and at the same time pull your hips down and under you. *Count V* is chest raised up and out, without inducing a large curve in the lower back. *Count VI* is head up and chin in; in other words, hold your head up so that the back of your neck is in line with the rest of your spine.

A seventh count may be added, which is perfect posture plus a smile.

THE SEVENTH DUCKLING

A story adapted for use in kindergarten and first grade.

ONE fine day Mother Duckling was sitting on seven large, round eggs, when Old Hen came along to call.

"How are you today, Mother Duckling," said Old Hen.

"I am very well, thank you," she replied.

They were exchanging remarks about the weather when suddenly Mother Duckling became excited. Her eggs were beginning to hatch.

One by one the little ducklings began to quack and waddle about. Six eggs hatched but one did not.

Old Hen cried, "That must be an ostrich egg, it is so large! You have a fine family. Why do you bother about that one?"

"I will wait," said Mother Duckling, "and in the meantime I shall name my other children."

Mother Duckling was particular. She wanted all her children to be as handsome as possible. She knew that they must stand straight and tall. She stood her ducklings in a straight line in front of her and began to name them.

The first duckling had feet that pointed out, so Mother Duckling said, "You will be called Feet Parallel, since you stand and walk with your feet pointed out. That name is to help you remember to keep your feet pointed straight ahead always."

"I am going to call you," she said to the next duckling, "Weight Forward, because you look as if you would topple over backward any minute. This will help you to keep your weight in front of your ankles.

"You will be called Knees Easy," she said to a stiff-legged duckling.

"Did you ever see such a big round stomach," cried Mother Duckling turning to a little duckling that could hardly waddle at all. "Your name will be Stomach Flat."

"To make you breathe better you must hold your chest out, so your name will be Chest Out," she said to another.

Mother Duckling then turned to the sixth duckling, who held his head a long way forward. "You will be called Chin In."

"What an ugly duckling!" cried Old Hen, as the seventh duckling hatched and waddled out to join the others. "We shall call him No-A-Count," said Mother Duckling sadly, "because he has none of the counts of posture."

How surprised they were when a fairy appeared with a long wand. She waved it over the little No-A-Count and said these words in her soft silvery voice:

"Stand straight, little duckling, stand straight,
Though you are feeling dull, I know;
And your cheeks are pale,
And your body's frail,
And your "tummy" pains you so.
For health and vigor will be your fate,
Oh come, little duck, stand straight.

"Stand straight, little duck, stand straight,
With your toes pointing right ahead;
And your feet apart, too;
It's good for you,
That's what the doctor said.
For health and vigor will be your fate.
That's it, little duck, stand straight.

"Stand straight, little duck, stand straight,
With your knees relaxed just so.
Pull your "tummy" in
And then your chin
And your chest 'way out must go.
For health and vigor will be your fate,
Stand straight, little duck, stand straight.

"Stand straight, little duck, stand straight,
And smile with all your might;
And you will work and play,
Through a happy day,
And sleep through a restful night.
For health and vigor will be your fate
When you, little duck, stand straight."

As the fairy said these words No-A-Count stood up very straight and proudly showed the other ducklings how tall and fine he was. One by one the fairy touched each duckling and each became as straight and tall as could be. So Mother Duckling was very proud.

SUGGESTIONS: This story may be worked out in pantomime. Webbed feet of paper may be made for the ducklings, and paper wings may be pinned on their backs. The fairy carries a wand. A paper comb may be made for the hen and also a hat. Mother Duckling wears eye glasses.

FLOWER GARDEN

A posture play adapted for kindergarten and first grade pupils.

SETTING: *Crape paper, grass green, is arranged in a manner representing a flower garden. It may be stretched across two supports, one piece in front and the other on top about two feet apart. The top sheet should be cut in six holes or flaps allowing the children to come up through the top of the paper. It should be so arranged that the children may crouch under the paper without being seen. Each child represents a flower.*

CAST OF CHARACTERS

MISTRESS MARY, flower gardener.

DAFFODIL, representing the first count of posture. That is that the feet should be placed in a parallel position a slight distance apart.

CARNATION, representing the second count of posture, which is that the body weight should come in front of the ankle joint.

ROSE, representing count three. This means that the knees should always be easy and relaxed.

CROCUS, representing the fourth count, which is the pelvic tilt. This is done by pulling the waist in and the hips down and under.

VIOLET, corresponding to count five, which has to do with the chest being thrust forward and diagonally upward.

SUNFLOWER, representing count six of the posture counts. This means that the head is held squarely on the neck and shoulders, the cervical spine being straightened as much as possible and the chin slightly tilted upward.

Mistress Mary enters, perturbed about the care of her flower garden. She carries a sprinkling can and busies herself with pulling weeds.

MARY: Oh mercy! This garden certainly is the bane of my existence. I spend every minute of my spare time pulling out all the nasty weeds and keeping it well watered. I hope that it will be beautiful, though, after all the care it has had.

(Daffodil sprouts through the paper.)

Oh, you gorgeous daffodil! Just to think that you came from an ugly little seed!

DAFFODIL:

The daffodils come in spring
I think they're just the prettiest things;
Their roots as wide as wide can be,
Wait just a minute—you shall see!

(Carnation peeps through ground.)

MARY: And that red carnation! Who would ever think of a red carnation growing any place except in a hothouse. I just planted it for an experiment.

CARNATION:

Carnation's stem is quite tip-tilt,
It gives her such a graceful lilt;
Her weight slants forward from her toes,
And fair she is wherever she goes.

(Rose sprouts from garden.)

MARY: Rose, most beautiful of all flowers! I'm so glad that you withstood Jack Frost so splendidly.

ROSE:

A rose is quite a supple flower,
She gracefully sways in every bower;
Her stem is free as it can be;
This gives her all her grace, you see.

(Crocus appears growing from ground.)

MARY: Dainty little crocus, sporting all your beautiful colors. My! but you are late this spring!

CROCUS:

My name is Sally Crocus,
But I'm taller than before;
'Cause I've pulled my hips in under me,
To represent count four.

(Violet sprouts.)

MARY: Here comes my dear little violet. She brings happiness to all who know her.

VIOLET:

The soft and gentle violet am I,
And people used to call me shy.
But now with chest thrust proudly out,
My poise no one can ever doubt.

(Sunflower, tall, comes slowly to standing position.)

MARY: And last of all, my sunflower. You grow with so little care and yet are so healthy and tall, seeming to stretch up to reach the sun.

SUNFLOWER:

The sunflower looks at the sun all day,
She holds her head just this way.
Her stem is straight as straight can be,
Which comes from stretching, don't you see?

(All flowers smiling and standing as tall and gracefully as possible.)

MARY: Now, I'm so happy that my garden is all in bloom, each flower growing with so much poise and beauty. If only we could stand as tall as they. We can, with just a bit of care and thought, cultivate our bodies to be as beautiful and graceful as are the flowers in my garden.

[*Curtain*]

POSTURE THROUGH THE AGES

Adapted for Junior High School.

A pupil speaks the lines and other pupils in the costumes described demonstrate the activities mentioned.

STRANGE how fashions in posture change as radically as fashions in dress!

The Greeks, beautiful of figure, leave no records of courses in posture but their heroes were athletes and warriors and it is obvious that a person with a weak body and poor posture can be neither.

From the Greeks originated the Olympic games. Here some of the major sports were discus throwing and javelin hurling.

(Demonstration of these by girl in Grecian costume who, when through, goes to rear of stage and stands in good posture.)

Another aspect of Grecian culture was the Grecian dance, which shows great freedom and poise of body.

(Demonstration by girl in Grecian costume, who does frieze work and free dancing. Music, "Song of India." She then goes to back of stage and, standing to the left of the previous person, remains in good posture.)

At a later date comes the Age of Chivalry. Again we find well developed bodies, perfectly poised, ready to parry every thrust of the opponent.

(Demonstration with foils. Girls then go to rear of stage and stand to left of previous person, maintaining good posture.)

In the Colonial Age, as a contrast to the free dancing of the Grecian times, we find the mincing but graceful steps of the minuet.

(Couple in Colonial dress dance minuet. Music, "Minuet in G" by Beethoven. Go to rear of stage and stand to the left of the previous person.)

During the time of the World War militaristic exactness was emphasized. In schools all over the country children were being taught posture, but what a conception it was!

(Girl in old-fashioned gymnasium clothes enters carrying Indian clubs. She goes through the counts of posture as follows.)

The feet were placed heels together and toes pointed out; the knees were practically hyperextended. The shoulders were thrown so far back that the shoulder blades almost met. The children were veritable penguins and the position was so taut that it was necessary to relax before any strenuous movement could take place. It was unnatural and tiring but it was soldier-like, and when Mars ruled everything must be militaristic. The exercises were much in keeping with the posture.

(Girl with Indian clubs does drill. Music, "Blue Danube Waltz." When through she goes to the rear of stage and stands to the left of the previous person.)

Today we are returning to the Greek conception of posture.

(Girl clad in black bathing suit, in order that movements of the body may be seen, goes through counts of posture as follows.)

The body is held in its natural erect position, which is easy but not lax. The feet are parallel and a few inches apart, giving a firm and wide base. The knees are in an easy position, adjusting the body weight so that it is in front of the ankle joint. The hips are

pulled down and the abdomen is pulled in. Good control in the region of the diaphragm is necessary for correct breathing. The chest is brought up so that the back is as flat as possible. The neck at the top of the perfect body is erect. The head is in line, well poised and proud. This position permits better body mechanics, with less chance for strain and fatigue and with more strength.

(Here girl does series of fundamental exercises to illustrate these principles.)

In tennis and basketball it is necessary that one movement flow easily into the next. The trunk is held erect in good line with the legs; this makes for efficiency in time and for endurance.

(Here girl in bathing suit jumps for basketball, as if at center position, then shoots for a basket from a free throw line and from the floor, being sure that all her movements flow and follow through easily. She goes to rear of stage.)

The evolution of the Greek dance has brought us rhythm, in which we find a close correlation to fundamental exercises.

(Girl in rhythm costume does folding and unfolding, elementary crawl, first roll. Music, "Song of the Volga Boatman.")

Brace up and look the world in the face. Remember that a straight body is something to be proud of. The thing to work for is poise, which is reflected through perfect posture. Don't envy good posture; practice it!

(Girl in bathing suit steps in front of the others and makes them go through the six counts of posture with the addition of the seventh—a smile. All march off.)

Another poster stressing the importance of good posture.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

COACHES and teachers of physical education, as well as students who wish to understand the science of basketball, will be interested in "Basketball" [1] by Bliss. It has a great many excellent diagrams and goes into every detail of equipment, practice and health habits that players of basketball should understand.

In view of the growing tendency on the part of high school and college students to smoke, this excerpt from the book is interesting:

"Most people would be better off if they never smoked, but it is highly essential for the best achievement to avoid smoking during training. Smoking reduces physical efficiency in two ways: (1) by reducing the oxygen-carrying power of the blood; (2) by the loss in neuromuscular efficiency due to the drugging effect of the nicotine on the neurones and synapses. The oxygen-carrying power of the blood is decreased by the displacement of oxygen in the hemoglobin of the red corpuscles with carbon monoxide. The extent of this displacement of oxygen is not definitely known, but only a small displacement, say 5 per cent, will cause dyspnea, and prevent severe effort over any appreciable length of time. Nicotine acts like a drug upon the nervous system by inhibiting the connections and transfers of stimuli in the synapses, thus slowing up muscular response and hence reducing the speed of the athlete. Smoking also accelerates heart beat, causes an increase in blood pressure and these disturances are usually so great that it requires considerable time for the return to normal. These facts explain why smoking should be avoided during training and perhaps at all times."

EVERY teacher of health needs to have a substantial foundation in bacteriology. Ordinary books on this subject are so technical that they cannot be read with understanding by most teachers. For this reason the book with that unique title, "Who's Who Among the Microbes" [2] by Park and Williams will be of unusual interest. The name of the leading author, Dr. Park, is a sufficient guarantee that it is authoritative. The subject matter of the book was first presented through a series of radio talks on communicable diseases and their microbes.

The first chapter opens with an historical review of the early discoveries. We pass in rapid review the early hunters of microbes such as Loeuwenhoek and Spallanzani. Little by little as the story proceeds, we learn about the development of the technic of bacteriology and its application to the control and prevention of communicable disease. One learns about the different kinds of families, how they live and how they may be destroyed. The illustrations are especially good. The style is fascinating. The thoughtful reading of this choice volume will put the reader in possession of a body of interesting and usable facts about bacteriology.

Try this for part of your summer reading. Have it put into your city and school library. Even high school students would find it interesting and would be able to get a good deal out of it.

THE Los Angeles Public Health Association is to be congratulated on bringing out "Old Mother Hubbard and Her New Cupboard." [3] It is made up of a series of popular articles on nutrition which were originally published in about fifty newspapers in Los Angeles County, California. The articles are well written, and the booklet deserves a wide distribution among all those who are interested in the health of children, especially among nutrition workers.

1. By James G. Bliss. Pp. 202. Lea & Febiger. Philadelphia, 1929.

2. By William H. Park and Anna W. Williams. Pp. 302. The Century Company, New York, 1929.

3. Prepared by Rama V. Bennett, Nutritionist. Pp. 50. Los Angeles Public Health Association, 1928.

New Books *on* Health

Reviewed by
Morris Fishbein, M.D.

THE PROCESS OF HUMAN BEHAVIOR

By Mandel Sherman, M.D., and Irene Case Sherman, Ph.D. Pp. 227. Price, $3. W. W. Norton & Company, New York, 1929.

HERE is a book that carries on experimentally the conceptions of Prof. John B. Watson relative to the emotions of infants and the establishment of responses which govern the activities of human beings in adult life. The investigations were begun in the Lying-In Hospital in Chicago in 1922 and continued in Northwestern University Medical School and in the Washington Child Research Center. The book is exceedingly technical and is planned only for those who have a good basis in biology and in psychology and not for the general reader.

Infants were studied in the nursery to determine the reasons for various reactions. The investigations reaffirm the idea that the character of the emotional responses shown early in life is one of the greatest factors in the determination of traits that develop later on. Very early in the life of the infants they can be divided into those who take life quietly and those who are irritable and cry on the slightest provocation. It is apparent that the emotional responses of the individual are affected by his lack of insight into his own behavior. Every dominant characteristic of the child's personality, which is, of course, his characteristic behavior, may be influenced by training and the results of such training are manifest promptly in the reactions of the child to various conditions.

THE WITCHERY OF ARCHERY

By J. Maurice Thompson. Pp. 259. Price, $2. The Archers' Company, Pinehurst, N. C., 1929.

ARCHERY is a sport which, like golf, makes addicts of those who have sneered before the first trial. The attempt of writers to bring this fascination into the consciousness of those who are uninformed usually fails. Occasionally a writer will catch the spirit of the sport and make a book which has literary merit and which is a revelation of the qualities of the sport of which the watchful onlooker is not aware. In this book, which meets the test, are collected a number of essays on various phases of archery, such as bow shooting, bird shooting, archery and hunting and savage life. The book is an attractive gift either for the boy who has caught the romance of Robin Hood or for the adult who finds in archery an escape from the realities of modern existence.

OLD AGE

THE MAJOR INVOLUTION. By Aldred Scott Warthin, M.D. Pp. 200. Price, $3. Paul B. Hoeber, New York, 1929.

OLD age is a process that creeps upon the human being who happens to survive the vicissitudes of childhood and the dangers of manhood or womanhood. As the cells of the human body lose their powers of repair, chemical and physical changes take place, leading eventually to what is known as senility. Gradually toxic products overwhelm even the ability of the body to rid itself of waste materials. Eventually such major changes may occur as take place in cancer. The result of all this is death.

The function of that department of scientific medicine known as pathology is to study the tissues of the human being and the changes that occur in disease. Dr. Warthin, author of this volume, is well known as a pathologist, and he has concerned himself here with the changes that take place in tissues in old age and in senility. The result is perhaps the best presentation of mankind progressing toward dissolution that has yet been made available.

The author is moreover a philosopher, who views mankind kindly, but as all philosophers must, with a certain amount of despair. He does not see advanced age as an unmixed blessing. He realizes the unfortunate condition of the senile person without means of support. He offers to old age merely the wish for sufficient courage and common sense to meet life as it is rather than as one would have it. With a mind still active, the period from 65 to 75 may be one of satisfaction and happiness.

The publisher has prepared this volume in a form, a type and a general appearance quite compatible with its extraordinary merit.

THE HEALTHY BABY

By Roger H. Dennett. New Edition Revised. Pp. 266. Price, $1.25. The Macmillan Company, New York, 1929.

THIS book has been before the public since 1912 and has undergone several revisions. The newer knowledge of rickets and of the effects of sunlight is one of the reasons for the present revision. Dr. Dennett says that every well child of any age should (1) show progressive development of body and mind; (2) gain constantly in weight, and have solid flesh and well shaped bones; (3) have the proper amount of restful sleep; (4) cry but little; (5) have a good appetite; (6) have well regulated bowels; (7) have no vomiting or gas; (8) have a clear skin and good color.

Dr. Dennett provides simple directions for infant hygiene. His statements are direct; he does not hesitate to recommend any food or article of diet that he thinks is worth while. His book reflects well current pediatric opinion and may be relied on by the mother who wants a handy reference work in the care of her child.

PERSONNEL STUDY OF DIRECTORS OF PHYSICAL EDUCATION FOR MEN

By Harry Alexander Scott, Ph.D. Pp. 90. Bureau of Publications, Teachers College, Columbia University, New York, 1929.

THE increasing attention paid to physical education in schools and in institutions has made it desirable for normal schools devoted to the development of personnel to survey the field and to determine the possibilities. The study here reviewed was made in the Teachers College of Columbia University with the assistance of the staff of that college. The volume provides a list of institutions in which directors of physical education are employed and a study of the duties, records, social relationships and experiences of the directors which will aid any young man or woman who hopes to go into such work. The initial education and preparation demanded is considerable; the salaries relatively are small. The work must therefore be considered in every sense of the word one of service, as are indeed all positions in the educational and health fields.

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Hyperopic Astigmatism

To the Editor:—Is there any cure for hyperopic astigmatism by exercising the muscles of the eyes? My vision is about 20/20 —2 in both eyes, without glasses. I have worn glasses for reading for two years. If there is a cure, what is it? R. C. L., Michigan.

Answer.—No exercises of the eye muscles will cure hyperopic astigmatism. The person so afflicted should wear glasses carefully adjusted by a competent oculist to correct the error in refraction.

Itch Is Caused by a Parasite

To the Editor:—What is the condition known as the itch? Is it really a disease? Can it be transferred from one person to another, or is it just a skin disorder that does not have any effect on the internal organs of the body? Is it dangerous?

H. F., New Jersey.

Answer.—The itch, technically speaking, means a disease of the skin caused by the so-called itch mite, which burrows under the superficial cells of the skin, there reproduces itself, and spreads from one part to another. It has no effect on the internal organs of the body, is not dangerous, but is readily transmitted from one person to another by contact. It is usually readily cured by rigid cleanliness and the use of proper remedies.

Reading of Clinical Thermometer; Urinalysis; Washing of Hair

To the Editor:—1. Will you please inform me as to how I could learn to read a clinical thermometer? 2. Is it possible for a layman to understand the results taken from a urinalysis? If so, will you give definitions for terms in a urinalysis report? 3. How often would you advise a victim of long serious ear discharge to wash his hair?

B. C., New York.

Answer.—1. A clinical thermometer is read just as is any other thermometer, by observing the level of the mercury in the column. In most clinical thermometers the column is magnified so that it is not difficult to find it and to note the number of degrees of temperature indicated.

A normal temperature sometimes varies as much as a degree, or even more, during the day but, as a rule, any elevation above 100 F., in connection with other symptoms, indicates some disturbance. It is not possible for a layman to determine the significance of any departure from the normal reading; that is the business of the physician.

2. Similarly, a urinalysis report can be interpreted only by the physician and should be considered in connection with other symptoms.

3. The presence of disease of the ear should not deter one from washing the hair at such intervals as may be necessary to keep it clean. It does make it more important for the person to exercise caution about drying the hair in such a way as to avoid chilling.

Shoes for the Three Year Old

To the Editor:—My little boy wore moccasin shoes until he was almost 3 and then a foot specialist to whom I went for shoes advised that he change to firmer shoes. His reason was that since children walk on cement and play on hard surfaces a good deal they need a shoe for protection. We like the pliable moccasin and so does the child. Should a 3 year old wear stiff shoes? D. P. L., Illinois.

Answer.—In view of the fact that a child of 3 years walks on hard floors, cement sidewalks, cobblestones, street car tracks and the like, it is highly advisable that he should wear shoes containing a rigid or at least a semirigid shank.

Baking Soda for Hyperacidity

To the Editor:—I have been told that baking soda (bicarbonate of soda) will give relief if taken for indigestion, but that it slowly eats the lining and tissues in the stomach. Is this true?

J. M., Pennsylvania.

Answer.—Baking soda is widely used as a corrective of hyperacidity of the stomach and serves there a useful purpose. It should not be taken indefinitely, however, except under the direction of a physician. It does not eat the lining of the stomach and tissues but does, if used to excess, produce a condition of alkalosis, the opposite of acidosis.

Skin Peeling in Tuberculosis

To the Editor:—My son is ill with tuberculosis. For about six years his hands have perspired greatly and at times have peeled. In recent months this peeling of the skin from the hands has become more frequent. What do you advise? N. P., New York.

Answer.—Excessive perspiration is a common symptom of tuberculosis. One cannot advise treatment intelligently without examining the individual case. The patient should see a physician.

Abscessed Breast

To the Editor:—I am expecting a second child. Is there any prenatal care I could give myself to avoid having the abscessed breast I had last time? Just what causes this condition and is it always avoidable? M. P. F., California.

Answer.—The breast may become abscessed from two sources: first, from infection already present in the patient such as an apical abscess in a tooth, severe pyorrhea and infected tonsils; second, from outside sources. In most cases, the patient is careless in protecting the nipple after nursing the baby. She handles the nipple without washing her hands and carefully cleaning her nails. She puts surgically unclean clothing against the nipple instead of sterile gauze. In the hospital she allows the baby to nurse longer than instructed, which results in a cracked nipple. Infection gains access through the crack, causing an abscess.

From this it follows that a woman in the prenatal period should attend to her teeth and any other focal infection present. After the birth she should carefully guard the nipples from infection throughout the nursing period.

Bronchiectasis

To the Editor:—What is bronchiectasis? What causes it? What is the usual way of treating it and what improvement can be hoped for? Is it a tuberculous condition? W. C. L., Arizona.

Answer.—Bronchiectasis is a term applied to a dilatation of one or more of the bronchial tubes or their branches. In postmortem ex-

aminations it is found in from 2 per cent to 4 per cent of all persons so examined, although in many of these cases there was no clinical evidence of abnormality during life.

Bronchiectasis may arise from the following causes: bronchitis associated with chronic cough or following prolonged exposure to dust, as in miners and potters; bronchitis accompanying pneumonia or influenza; compression of the lung from a tumor or aneurysm, such as may occur in syphilis; fibrosis of the lung from whatever cause; acute bronchopneumonia; compression of the lung, as in empyema, and tuberculosis of the chronic ulcerative type.

The treatment of bronchiectasis is the treatment of the condition that causes it though it is frequently impossible in the more chronic cases to accomplish much by treatment.

Pains in the Legs

To the Editor:—My little girl, aged 8, and my boy, aged 6, complain frequently of pain in the legs. There is no swelling or joint trouble, but severe pain, often making them cry several times during a night. Is this rheumatism? B. DeM., Illinois.

Answer.—One of the commonest mistakes is to regard children's complaints of pains, especially in the legs, as "growing pains." They are commonly due to rheumatism of an insidious type, which leaves disastrous effects on the heart.

The child with such a complaint should be carefully examined by a competent physician; if necessary, at intervals for some time.

Epilepsy

To the Editor:—In regard to epilepsy or epileptic fits: Is it possible for a local doctor to cure epilepsy completely if it is treated in the early stages? In a girl of 16, who seemingly is cured but was thus bothered for two years, is there danger of transmitting the disease to her children in later years? What are the chief characteristics or symptoms of epileptic fits in a woman—nervousness, distraction, headache and painful menstruation? M. C. A., Iowa.

Answer.—Epilepsy is a disease the cause and pathology of which is still unknown. In many cases it is incurable, no matter how early treatment is begun. In children, however, the use of what is known as a ketogenic diet, consisting largely of fats, has been helpful in lessening the frequency and severity of the attacks. It is a plan of treatment, however, that is not without some risk and should be undertaken only by a physician who has made himself familiar with it.

There is a distinct hereditary element in epilepsy, more often of the indirect type; that is, of an epileptic child being born of parents not necessarily epileptic but possessing an unstable nervous condition.

To what extent the presence of epilepsy should deter one from matrimony and child-bearing depends on the family history.

As to symptoms, epilepsy manifests itself in two forms, which are designated by the French terms *petit mal*, or little attack, and *grand mal*, or severe attack. The first type is characterized by simple loss of consciousness with more or less mental confusion; it may last only a few seconds. In *grand mal*, there is a loss of consciousness with spasm of lesser or greater extent, severity and duration. The seizure is followed usually by a period of sleep, which may last from a few minutes to some hours. In many cases there is what is known as an aura, or warning, such as a flash before the eyes or a peculiar sensation beginning in the fingers or toes and running up over the body.

Headaches are not uncommon among epileptics, but headaches are not an essential part of the disease, nor is painful menstruation.

Tuberculosis

To the Editor:—Are tuberculosis and consumption the same disease, and are they contagious? P. G., Massachusetts.

Answer.—Tuberculosis is an infection of the body with the *Bacillus tuberculosis.* It may attack almost every tissue and organ in the body, so that there are tuberculosis of glands, tuberculosis of bone, tuberculosis of skin, etc. One of the most common and serious forms is tuberculosis of the lung. This is what is popularly called consumption.

Tuberculosis is contagious. The bacilli that cause it are acquired by one individual from another already afflicted, usually through the air, the germs being conveyed in the fine spray that comes from the consumptive patient as he coughs, sneezes or spits. Children often get the infection through milk. The majority of persons become infected with this bacillus in early life but the symptoms are so slight, when they are present at all, that the person is unaware of the fact that he is infected.

Twitching of Muscles

To the Editor:—For the last six months I have had an involuntary jerking or twitching of the muscles or nerves in my arms and legs and sometimes through the right or left side. There is no pain whatever with the exception of a slight tingling pain in the ends of fingers at rare intervals just before a jerk in the arm. This started after retiring at night but lately it comes several times through the day. If I am holding a newspaper while reading I can see the arm jerk plainly. What do you think this could be? Would you advise me to see a physician about it? I had an attack of neuritis about a year ago and I was told at that time that my blood pressure was 160. I have not been to the doctor since recovering from that attack of neuritis. K. M., Illinois.

Answer.—Such a jerking of the muscles is what is known as a tic and might easily follow inflammation of the nerves. These tics are often difficult to remedy and of course require careful examination and study of the patient.

Gonorrhea

To the Editor:—Would gonorrhea show up in a blood test of a person who is supposed to have had the disease for seventeen years? What symptoms would indicate that the disease is still present? What would be the proper way to find out? M. S., Texas.

Answer.—Blood tests for gonorrhea, including one test made in much the same way as is the Wassermann test, are in use, but their value is much less than is the Wassermann test for syphilis. Positive tests are usually obtained only with widespread or deep-seated infections, and even in these negative tests may be obtained. In a given case, therefore, a negative test would not be reliable evidence of the absence of infection. Active infection usually causes irritation and a local discharge. After a few weeks or months the inflammation subsides, and there may be no symptoms, although infection capa-

ble of infecting others may still be present.

Careful physical examination of the patient and the microscopic examination of secretions should form the basis of an opinion as to the presence of infection. It is generally held by specialists that the gonococcus does not persist in the tissues for so long a period as seventeen years.

Suprarenal Gland

To the Editor:—Can a test be made to determine whether or not the adrenal gland is deficient in activity (such as the basal metabolic test for the thyroid gland)? When the adrenal gland is deficient, has the hypodermic or intravenous injection of adrenalin or the administration of suprarenal extract by the mouth proved a successful method of restoring the gland to its normal condition? L. H. M., Florida.

Answer.—There is no method for determining the activity of the suprarenal (adrenal) gland that is comparable in simplicity or in accuracy with the determination of the basal metabolic rate.

The administration of epinephrine (adrenalin) by hypodermic or by the intravenous route has not been successful in restoring the suprarenals to normal function. The hypodermic administration of epinephrine has produced an amelioration of symptoms in some cases of Addison's disease.

Cases of clinical hypo-adrenia, which is believed to represent a functional deficiency of the suprarenals, have sometimes been relieved by the administration of the desiccated gland. *The Journal* of the American Medical Association of May 11, 1929, contains an article by Stewart and Rogoff describing the use of an extract of suprarenal cortex which appears hopeful. Other research workers are also attempting to isolate a product from the cortex, which is very active when given by mouth.

Ultraviolet Ray Lamp in Tuberculosis

To the Editor:—Are ultraviolet light (quartz lamp) treatments beneficial to persons having lung trouble, especially those who have hemorrhages from time to time? I have been informed that light treatments are effective when there are no hemorrhages, but are dangerous otherwise.

E. C. W., New York.

Answer.—There is no incontrovertible evidence that the ultraviolet light is of value in the treatment of pulmonary tuberculosis. Light treatment is apparently so easy of administration, whether by lamp or by the direct sun's rays, that it has acquired much popularity. Undoubtedly light has value in the treatment of some diseases, but, in tuberculosis, those who need

its help the most are helped least by it. We should say that one would be safe in not expecting cures by this means.

Instrument for Detecting Dead Teeth

To the Editor:—I have just heard of an electrical instrument by which it can be determined whether a tooth is alive or dead. I know that x-ray photographs do not always tell; in fact I have had dead teeth extracted when repeated x-rays had given no indication of such a condition. This electrical instrument is attached to, or put in contact with, one tooth at a time, and the current turned on; the reaction promptly tells whether it is dead, half dead or very much alive. Can you advise me what the instrument or process is called? So far as I know, all the dead teeth in my head are now removed. The remaining teeth, so far as can be determined by x-ray or outward examination, are all right, but I desire to have them tested further by this instrument, provided the method is sane and reliable.

R. M., Illinois.

Answer.—There are two appliances on the market that are used by dentists in determining whether the nerve pulp is still alive. One of these instruments is manufactured by the Cameron Surgical Specialty Company and the other by the Ritter Dental Manufacturing Company.

One, at least, of these appliances consists essentially of two small electrodes, which are applied on either side of the biting edge of the tooth to be tested. A feeble current is then passed from one electrode to the other and the amount of current is gradually increased until the patient feels a sensation. In a normal tooth, it is found that a very weak current will arouse a painful sensation, whereas in a tooth in which the pulp is dead, a strong current will produce no sensation whatever.

Tuberculosis

To the Editor:—Is it possible that in the home in which a person suffering with tuberculosis has lived the furniture, as well as the linens and accessories, would become infected with the disease germs? If so, how may the purchaser of the furniture and linens disinfect them so there will be no possibility of spreading the disease? The patient did not die in the home, as she lived away from it for about one year, but the husband lived there continuously. E. W. H., Pennsylvania.

Answer.—The *Bacillus tuberculosis* lives only a short time outside the body and it is not probable that the disease is conveyed by infected furniture, woodwork and the like. If the patient has not lived in the house for a year and the husband shows no signs of infection, we do not think a person need hesitate about purchasing the furniture. Airing in the sun and the usual cleaning that furniture naturally undergoes would render assurance doubly certain.

Radiation Treatment for Diseased Gland

To the Editor:—I should like your opinion regarding the use of gamma rays for the treatment of an enlarged prostate gland. I have been troubled with this disorder for three or four years and have had treatment, but it is alleviated only for a short time. Recently I read a book by a Dr. Dubois in which he states that the application of gamma rays invariably proves successful and cites one case in which a man was unable to sit upright and yet within six weeks the gland was reduced to normal size. Is this treatment to be obtained anywhere and is it expensive or within reach of the average worker? A. G., Massachusetts.

Answer.—In a recent summary of radium and x-ray therapy by an expert, published with the sanction of a committee of the American Medical Association, it is stated: "Prostatic hypertrophy has been treated with varying results. The spongy, vascular types are the only ones affected."

In every large city and in many smaller cities there are specialists in the treatment of disease conditions with radium and the x-ray, who are known and recommended by physicians in their respective cities.

Skin Test for Parasitic Diseases

To the Editor:—Explain the methods of procedure and experimental results on animals obtained by intradermal reactions of parasitic proteins. I am particularly interested in experiments performed with *Trichuris trichiura, Oxyuris vermicularis, Ascaris lumbricoides, Trichina spiralis,* and *Schistosoma haematobium.* Do you consider these skin tests of much value in an early diagnosis of parasitic disease in man?

B. C., Tennessee.

Answer.—Extracts and other preparations are made of animal parasites and the reactions that may follow the injection of such materials into the skin are studied. It has been found that certain persons are susceptible to a local toxic action by derivatives of animal parasites as shown by the development of an area of redness at the point of injection. This is particularly true in the case of ascaris (round-worm), and persons giving such reactions may develop urticaria and other symptoms of sensitization from contact with this worm.

It has not yet been established that skin tests are of value in the early diagnosis of parasitic diseases in man.

Noneruption of Second Teeth

To the Editor:—I have a pupil, a boy 17 years old, who has never cut his second set of teeth. An x-ray picture shows no sign of them. The teeth he has are good but are so small that they make the mouth a queer shape. With this exception, he is a fine looking, healthy lad, but, as a result of what he considers a deformity, he is self-conscious and shuns other people. He even hates to laugh. I feel that it is preying on his mind. Are such cases rare? What is the cause? Is there anything that can be done? He has wished to have his teeth extracted and get artificial ones. Would it be better to wait till he is older? His mother tells me that he has always been, even from babyhood, a healthy child.

J. B. M., Utah.

Answer.—The case of this boy who has never cut his second set of teeth is unusual, though there are many cases in which a few of the permanent teeth are missing. Something should be done for this boy for a psychologic reason if for no other. His consciousness of this deformity is likely to grow till it eventually handicaps his prospects in life. He is young to have all of his teeth extracted, and the case should be studied by a competent dentist.

If the x-ray shows that the roots of the boy's teeth are sufficiently developed, he might have bridgework done to restore the appearance of his mouth and to improve his mastication, but to have all his teeth out at his age would be a radical procedure and would not be justifiable unless every other plan proved impractical.

Boiling vs. Pasteurization

To the Editor:—Some one recently told me that boiling will not kill tuberculosis germs in milk, while pasteurizing will. In preparing the milk for my baby, I buy raw nursery milk, and boil it fifteen minutes in a double boiler (counting from the time the water actually comes to a boil). Is my present procedure safe from tuberculosis dangers, or should I keep the milk at a lower temperature for some time in addition to boiling it? Is there any other common food requiring special treatment against tuberculosis germs? How about drinking water that has been well chlorinated?

F. W. W., Indiana.

Answer.—Boiling milk kills the germs of tuberculosis or any other germs more certainly than pasteurizing, though either process properly done will kill the bacilli of tuberculosis. Boiling the milk for fifteen minutes in a double boiler as you are doing is about as certain a method as there is of securing sterilized milk. Boiled milk, however, lacks certain properties, and the child who is being fed on boiled milk ought to have orange or tomato juice daily. Well chlorinated water would be free from tuberculosis germs.

Iodine Stain on Chin

To the Editor:—Some time ago I had a skinned chin and it became infected. I put several applications of iodine on it and this removed the skin and the area was several weeks in healing. It is well now, but there is a round place about 2 or 3 inches in diameter that is pigmented a dark brown. I should like to bleach the skin to its natural color, if possible, and I have been rubbing it with hydrogen peroxide; it is a little bit better but not much. Do you know of any way to bleach it out quickly? I have seen two doctors about it, and they say that it will probably take a year or two for the stain to disappear.

H. B. J., North Carolina.

Answer.—There is no rapid way to remove the pigment from a spot such as that described. Oxidizing preparations, such as hydrogen peroxide, are of some service.

At times the use of a particular ointment of mercury is of service in hastening the disappearance of pigmentation of this type, but there is danger of producing a dermatitis (inflammation of the skin).

Angina Pectoris

To the Editor:—My mother has had heart trouble for years, and last spring when she had severe pains in the heart region, I took her to a well recommended doctor in another town. He told her that she was in pretty good shape, but in an "aside" to me he suggested that I come in and we'd talk it over. He then told me that he suspected angina pectoris, but his manner indicated that he was not certain. Cannot a doctor tell definitely and without doubt whether or not a patient has angina, or did he possibly want to spare me pain of being told definitely that this disease is present? Does a patient ever show signs of improvement?

B. W., Michigan.

Answer.—It is true that angina pectoris in many cases, though strongly suspected, cannot be positively proved, even by the best of physicians. The patient with symptoms suggestive of angina ought to be examined by the physician at suitable intervals; just how often is for the physician himself to determine.

Does Tuberculosis Affect Teeth and Hair?

To the Editor:—I have a son, now 22 years old, who has been ill with tuberculosis since November, 1927. He has been in bed since July, 1928. For the past few months he has noticed a groove forming in the edges of his upper and lower front teeth—the edges that meet when the mouth is closed. This groove extends across the width of the teeth, leaving a sharp edge to the front and back of the groove. Until this occurred he had a fine set of teeth. Does this groove denote a wasting of the teeth? What treatment do you advise? In the past several months he has also had considerable dandruff, something like the dandruff that babies often have, and though I take care of his scalp often, the dandruff persists. The hair is falling out and brown splotches are appearing on his scalp. Is there something I can do to cause a new growth of hair and do the splotches denote anything?

N. P., New York.

Answer.—It is not possible to give a definite opinion about the condition described without a personal examination and careful study of the case. Any condition that affects the nutrition of the body, as does tuberculosis, may interfere with the growth and condition of the teeth, just as the finger nails and the hair are often affected by such conditions. Whether or not the dandruff is a result of poor nutrition, it is impossible to say. The young man should see a physician and also a dentist.

"I heard her cry with Pain"

DASHING out of the house at a call from her play companions, her foot caught and she fell. Her head got a terrible bump and the rough bricks skinned her little leg.

Accidents of this kind are always happening where there are active children. *First Aid* should be prompt, even for just a scratch, because delay may lead to serious consequences and lifelong scars.

Germs of *infection* lurk everywhere. All they need is a slight break in the skin to begin their deadly work. Be safe—help prevent dread infection. When there is a Cut, an Abrasion or a Burn apply Hexylresorcinol Solution S.T. 37 at once!

This powerful antiseptic, a recent discovery of Medical Science following years of research, is *soothing* and *astringent*. It does not smart or irritate the delicate injured tissues. A real aid to the natural healing of the wound.

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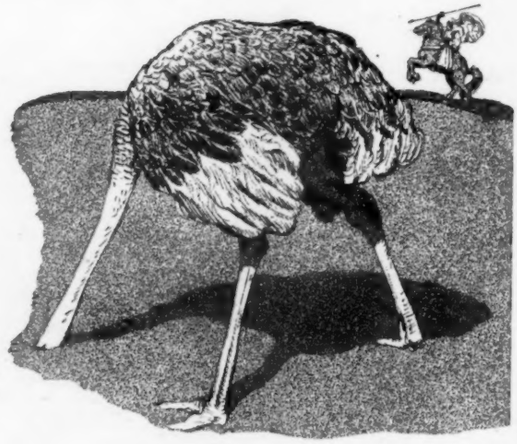
Cancer—Ostriches

THE old notion that ostriches have the habit of hiding their heads in the sand in time of danger has been disproved again and again. Nevertheless the expression "hiding his head in the sand like an ostrich" aptly describes the man who seeks to avoid danger by refusing to recognize it when it comes.



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EACH year thousands of people die of cancer—needlessly—because they accept as true some of the mistaken beliefs about this disease.

No. 1—That every case of cancer is hopeless. *It is not.*

No. 2—That cancer should be concealed because it results from a blood taint and is disgraceful. *It is not.*

No. 3—That nature can conquer a malignant cancer unaided. *It can not.*

No. 4—That cancer can be cured with medicine, with a serum or with some secret procedure. *It can not.*

Many cancer patients are neglected or avoided because of the mistaken belief that cancer is contagious. *It is not.*

Be on Watch for First Signs of Cancer

Be suspicious of all abnormal lumps or swellings or sores that refuse to heal, or unusual discharges from any part of the body. Do not neglect any strange growth. Look out for moles, old scars, birthmarks or warts that change in shape, appearance or size.

If you have jagged or broken teeth, have them smoothed off or removed. Continued irritation of the tongue or any other part of the body is often the beginning of cancer trouble.

In its early stages, various kinds of cancer yield to skilful use of surgery, radium or x-rays. But the best doctors in the world are powerless unless their aid is sought in time.

Beware of Plausible Quacks

Because the nature and origin of cancer are largely shrouded in mystery, quacks and crooked institutions reap a cruel harvest. They prey upon the fear and ignorance of those who do not know the facts concerning cancer. They are often successful in making people believe that they have cancer when they have not. Later, with a great flourish, they boast of their "cures".

Gratefully the patients of the fakers, first thoroughly alarmed, later entirely reassured, are glad to sign testimonials with which new victims are trapped. Beware of those who advertise cancer cures.

An annual physical examination by your family physician, or the expert to whom he sends you, may be the means of detecting cancer in its early stages. Do not neglect it.

Send for the Metropolitan's booklet, "A Message of Hope". Address Booklet Department, 7-G-9, Metropolitan Life Insurance Company, New York.

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Treatment for Acne

To the Editor:—What do you think of the nightly application of zinc oxide ointment on the face, allowing a coating to remain on over night? I started this treatment for acne about four months ago as an experiment. It seems to have done wonders, but I am told that the ointment will be absorbed and the zinc will get into the blood stream and act as a poison. Is this likely? This is the first treatment I have tried that gives promise of success. I have followed diets, and still do, and have even taken shots, but my face responded only slightly.

V. V., Georgia.

Answer.—If the ointment of zinc oxide has been helpful, it would seem logical to continue it. There is no likelihood that there would be sufficient absorption to result in systemic poisoning.

The injection of vaccines prepared from the bacteria present in acne has not proved a successful method of treatment.

Diet in Diabetes

To the Editor:—I have diabetes. I have dieted and abstained from starch and sugar and have eaten fresh and stewed fruits without sugar under the doctor's direction. When a friend of mine recently developed the same disease, her doctor put her on a much stricter diet than mine, although she seems to feel as well as any one, and he told her not to eat apples. I eat many apples, sometimes three a day. I feel no worse than I did a year ago and I am working hard at physical labor each day. I lost a few pounds but have regained them and am still about 30 or more pounds overweight. I have heard of other diabetic patients eating apples and would like your opinion on this subject.

M. J., New York.

Answer.—The diet of each patient with diabetes has to be determined by the effect it has on the metabolism of sugar. It is quite possible that the inquirer may eat apples without harm, while some other patient would be disturbed by them.

The sensible thing for any one with diabetes to do is to have himself examined carefully by a physician, be under his care, and have him determine by careful examination just what is the best diet for that person.

Some helpful books for patients with diabetes have been published, in which the patient is advised how to examine the urine and how to estimate the diet. Used under the direction of a physician, these books are helpful indeed.

Treated Water

To the Editor:—Is "alkaline muriated acidulous water" drunk for a uric acid solvent and for catarrh of stomach? Or is it used for bathing only? Where may it be obtained? M. B., Indiana.

Answer.—We do not know what is meant by "alkaline muriated acidulous water" for drinking. The inquirer may have in mind bathing in water in which is dissolved bicarbonate of soda which is caused to effervesce by the addition of muriatic acid. This results in an evolution of carbonic acid gas in fine bubbles, which has a rather pleasant, tingling effect on the skin and to some extent increases the circulation of the blood in the peripheral vessels.

Objects to Athletics for Boys

To the Editor:—I am going to take up athletics, but my father objects and says that athletics is harmful to the student. Will you please explain whether it is or not? A. T., Iowa.

Answer.—Probably the father has in mind competitive athletics; that is, participation in contests between teams representing different high schools. If this is the case, many physicians and other authorities would agree with him, for they believe that these contests have been conducted in such a manner that the disadvantages oftentimes outweigh the advantages.

Physical development by way of games, sports and other means, which promote active exercises of the right sort, are among the most effective and useful methods of education. In the United States, however, such an intense interest in interscholastic competitive games has grown up that there have developed many abuses. The concentration of the attention of the physical director and the coaches on the few boys who are most skilful in certain games to the neglect of the large groups of less well developed boys who most need physical training is one of the common faults. The sensational newspaper stories about the competitive games with comment on the prowess of individual competitors, accompanied often by their pictures, begets an exaggerated impression of the value of athletic skill as contrasted with other qualities which school life ought to develop. If, therefore, the objection is to such features in competitive athletics, we should agree, but everything depends on how the physical education departments and the associated games and sports are conducted.

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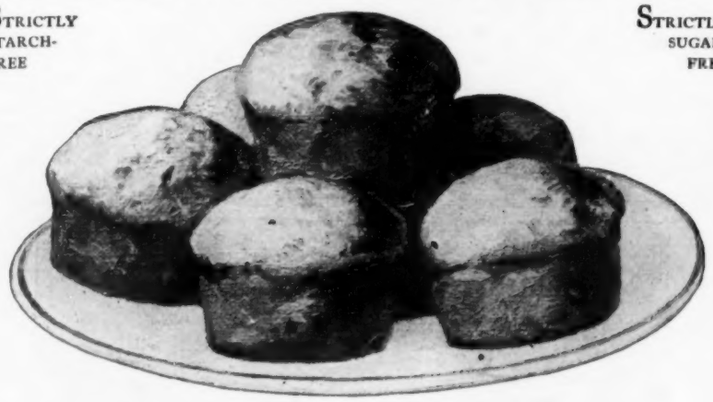

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Lump in Child's Breast; Menopause; Leukorrhea

To the Editor:—1. Is there any likelihood that a lump in the breast of a 10 year old girl might be cancer? This enlargement appeared about four months ago, directly under the nipple. At first it came and went but now the swelling is there constantly. Only one side is affected. The child is very nervous. 2. Should a woman, 53 years old, who stopped menstruating two years ago be having "hot flashes," chills, extreme weakness, and night sweats at this late date? The first eighteen months after flow ceased, little change in general health—which was not good—was noticed. 3. What causes the joints to crack or snap on articulation. The woman so afflicted is stiff at times and sleeps poorly. 4. Might leukorrhea in a young woman of 30, unmarried, be responsible for severe pain in the lower part of the back, hips and legs? A thick yellow discharge first made its appearance after a severe siege of whooping cough three years ago. This girl is underweight, weak much of the time and in a generally rundown condition. Although her doctor knows of the trouble she has never had a pelvic examination. She was in bed a year after whooping cough because the doctor feared tuberculosis. Could this discharge be of a tuberculous nature?

M. F. D., Minnesota.

Answer.—1. A lump in the breast of a 10 year old girl is not likely to be cancerous, as cancer is rare at this age although not unknown. She should be carefully examined by a competent physician.

2. The duration of the menopause is varied. It might last much longer than eighteen months, but as a rule the unpleasant symptoms gradually subside.

3. The condition underlying the "cracking" of the joints is usually a change in the fibrous tissue involving the capsule of the joints, the ligaments and any tendon or fascia in the immediate region. These structures are made of fibrous tissue which, when allowed to contract, shortens, and when stretched causes peculiar cracking. After the cracking has been produced one or more times, the tissue is stretched and no further cracking occurs until the structures are allowed to reshorten.

4. Leukorrhea is merely a symptom. The condition that causes leukorrhea might also be responsible for the pain described. The young woman should be carefully examined by a physician and his advice as to treatment closely followed.

Why Worry About Such Things?

MRS. DORLAND had been discussing the health of various women of her acquaintance. One suspected kidney trouble, another was obsessed with the fear of cancer, a third was afraid she was tubercular.

Countless people go through life worrying about diseases which they do not have. This is quite unnecessary—so why worry about such things?

By having your family physician give you a thorough health examination every year you may be *sure* of your health.

The best medical opinion favors the periodic health examination for all, whether ill health is suspected or not. Such examinations are not unpleasant and they inspire confidence by the fact that through them trouble is detected at so early a stage that treatment is usually successful. Of course, no health examination is complete without several x-rays. Make an appointment with your physician today.

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Representatives Wanted—*Write Hygeia*

Sex Books; Indigestion; Occupations for Tuberculous

To the Editor:—1. Are there any books written on advice to newly married couples? 2. In attacks of indigestion should I take medicine or not? Gas forms on my stomach causing pains around my heart; these pains get lower until the gas passes out. 3. Can you give me advice as to suitable occupations for a girl with weak lungs who has to earn her living? My case is not active. Are there any books written on this subject? E. B., California.

Answer.—1. A good book for newly married couples is "The Hygiene of Sex" by Von Gruber, published by Williams and Wilkins Company of Baltimore; the price is $1.50.

2. It is impossible to advise one about the treatment of indigestion without a thorough personal examination. The disorder may come from a variety of causes. The treatment of most troubles of this sort is a matter of diet, and one should follow the advice of a good physician.

3. Usually the state or local tuberculosis association is in the best position to advise about suitable positions for those who have had tuberculosis.

Diet and High Blood Pressure

To the Editor:—What is the cause of high blood pressure? Does the diet have anything to do with it? If so, what foods should be avoided? M. R., California.

Answer.—The causes of high blood pressure are numerous. Blood pressure tends to increase with age and also is a result of certain diseases. Excessive eating tends to increase it and it is believed by some physicians that the so-called protein constituents of some foods, e. g., lean meat such as beef, are more harmful than the starchy and fatty foods. There is much difference of opinion about this, however, and the best advice one can give is that the diet should be only sufficient to meet the actual needs of the individual.

Frequently high blood pressure manifests no symptoms whatever in the early stages, but is often discovered accidentally in the course of examination for life insurance or examination for employment in some industry. As the blood pressure grows still higher, one is apt to have a sense of fulness in the head, increased by exertion, and an increase in the pulse rate, and not infrequently slight hemorrhages in various parts of the body, as in the eye.

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White bread is one of our most digestible foods. The proteins and carbohydrates in which it is rich are virtually all assimilated by the human system.

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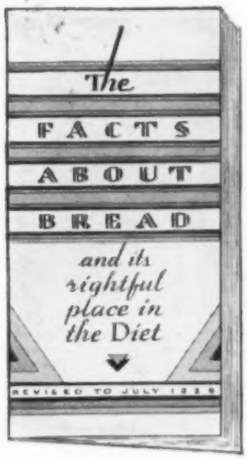

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KNOW THE FACTS ABOUT BREAD

The above statement has been submitted to and approved by a group of distntereted and competent investigators in the field of nutrition, selected by the editor of The Journal of the American Medical Association. These investigators include Professors Graham Lusk, E. V. McCollum and Lafayette B. Mendel.

{ For complete information on nutrition see books written by these authorities }

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LIBRARIES OFFER PLANS FOR HEALTH READING

Preparation for marriage should begin in the cradle and not at the altar, declares Dr. Frankwood E. Williams of the National Committee for Mental Hygiene, in a booklet just issued by the American Library Association for its Reading with a Purpose series. Dr. Williams referred to a questionnaire in answer to which 200 men and women asserted that unsuccessful marriages were due to warped ideas and false notions acquired as children. He discusses the problems of emotions, habits and mental health and offers practical guidance through the reading of five stimulating books.

A similar reading course has been prepared on medical topics by Dr. Morris Fishbein. He recommends five practical books on health written by physicians, but couched in nontechnical language. These reading courses may be obtained from any local library.

NEED SANITATION WITH PASTEURIZATION

Pasteurization is the simplest, cheapest, least objectionable and most trustworthy method of rendering milk safe, wrote Dr. M. J. Rosenau recently in the *New England Journal of Medicine.* It does not claim to replace sanitation and decency. Stale, weak and dirty milk is still stale, weak and dirty after it has been pasteurized. Pasteurization is advocated because milk frequently carries the germs of diseases harmful to man.

Milk heated to 145 F. does not undergo appreciable physical or chemical change. It sours just as raw milk does, although somewhat more slowly. The heating destroys certain properties, such as vitamin C, which is reduced by about half, Dr. Rosenau says. Incidentally, some raw milk is lacking in this vitamin. The amount present depends on the amount in the cow's feed. One must therefore add plenty of orange juice or tomato juice to the diet to provide the antiscorbutic vitamin.

Four essential factors in the production of clean milk have been defined by the U. S. Department of Agriculture: (1) clean, healthy cows; (2) small-top milking pails; (3) sterilized utensils, and (4) proper cooling. Pasteurization cannot take the place of these. Careful and frequent inspection helps to maintain them and pasteurization is an adjunct to inspection. It destroys the dangers inspectors cannot see.

For those wayward thumbs

This soft, pliable, kindly little binder, fastened gently to baby's active chubby arms, does just what it is intended to do and no more—keeps the thumb or finger from quite reaching the mouth, and does not hamper movements or play in any other direction. Children become immediately accustomed to it and it is a wholesome way to ward off the whole train of baby ills—facial deformities, respiratory and throat troubles—that come with the thumb-sucking habit. Help your baby—try a

BOWERS KANT-FAYL ANTI-FINGER SUCKING DEVICE

If your dealer cannot supply you, order from us. Per set, $3.00

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Donahey Bldg. LITTLE ROCK, ARK.

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GENUINE
GLUTEN FLOUR
Guaranteed to comply in all respects to standard requirements of the U. S. Department of Agriculture.
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GENUINE
WHOLE WHEAT FLOUR
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Nothing added—Nothing taken away
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GRAHAM FLOUR
A real old-fashioned, honest-to-goodness Graham Flour; exactly like that made by Dr. Graham
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Scientifically designed in types of models for all figures, gives low abdominal uplift with no constriction.

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Wonderful reaction to normal health, and mental and physical buoyancy.

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Representatives for Hygeia are wanted in every community. Generous commission. Send for full details.

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Pure Juice — Without Preservative—Not Condensed—No more Bother of Squeezing — Try it at MY Expense.

Fresh, pure juice—sealed under vacuum just as it gushed from the tree-ripened fruit.

Until now, only in Florida could you enjoy the juice of really tree ripened Florida Oranges as the fruit growers know it.

Today a new method, which absolutely seals in—right at the grove—the fresh fruit flavor of tree-ripened Orange juice, makes available a most delectable tonic beverage which only the growers have formerly enjoyed. It comes to you in its natural state just as it gushed from plump golden fruit, sun-ripened on the tree. It is not a concentrated syrup or extract. Nothing has been added to the fresh, delicious juice as it came from the fruit.

Let ME pay for YOUR Test!

Now you may always have a liberal supply of this delicious beverage. To try it without obligation or expense, mail the coupon, and I'll ship immediately, all charges prepaid, a case of one dozen 20-oz. containers of this tree-ripened orange juice, which will keep indefinitely. Try a glass or two, and if you are not delighted with it send the rest back at my expense. Otherwise your check in ten days for $4.25 pays in full. Mail the coupon now. It will cost you nothing to make the Test.

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Yes, you may send, at your expense, your special package of one dozen containers of vacuum sealed delicious Tree-Ripened Orange Juice. After trying the contents of one container, I will either return the rest at your expense, or send you $4.25 ($4.80 west of the Mississippi) in full payment within ten days.

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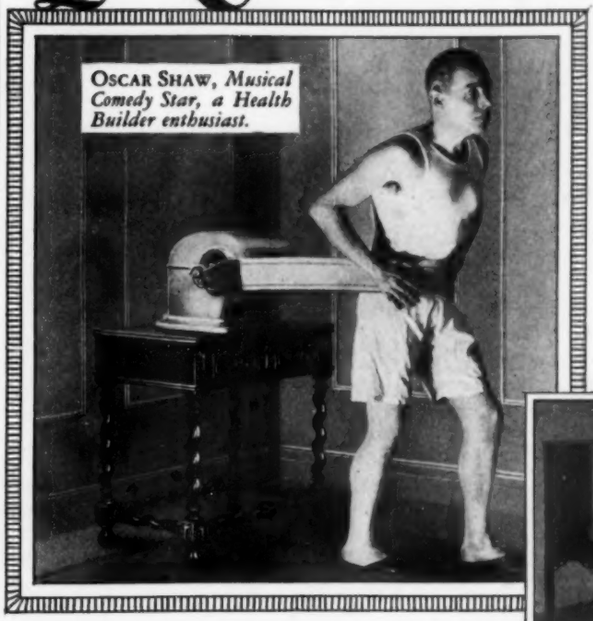


OSCAR SHAW, *Musical Comedy Star, a Health Builder enthusiast.*

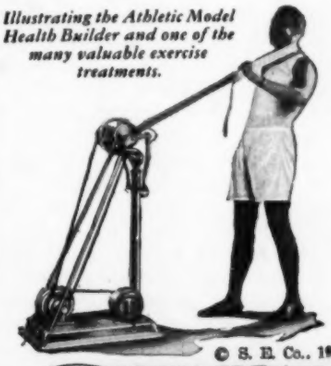
DOROTHY KNAPP, *world-famous beauty, says, "I unhesitatingly recommend the Health Builder to everyone interested in keeping radiantly healthy".*

NEVER before has health been so important an asset for business and social success as it is today. Never before has the pressure of modern living put such a strain on physical condition. You simply *must* **KEEP FIT**—without waste of time or effort.

Oscillate Your Way to Health

There is only *one* way to keep fit—DAILY physical exercise. Science now makes this possible, and in a most enjoyable, simple new way. Just 15 minutes a day of invigorating massage and vibratory-exercise with the famous Battle Creek Health Builder, manufactured under the patents of Dr. John Harvey Kellogg, awakens each tiny capillary into new activity, stimulates the perspiratory and sebaceous glands, vigorously massages the heaviest muscles, helps eliminate dangerous body poisons, and aids in general reduction of body weight.

Illustrating the Athletic Model Health Builder and one of the many valuable exercise treatments.



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Send at once for "Keeping Fit in Fifteen Minutes a Day"—a valuable FREE book showing how the Health Builder keeps you fit. Health should come *first!* Write for your copy—NOW!

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Choice of 80,000 Because Medically Correct

The Battle Creek Health Builder Keeps You Fit!

Training the Baby

WELL grounded health habits established before a child is three, are the basis of sound health throughout life. *Early training to the toilet is most important;* a child should be taught to recognize and take care of his own needs at a very early age.

"TOIDEY" AND STEPS

When baby sits alone *(usually between fifth and eighth month)* he should begin to use the "Toidey" with Foot Rest. Baby's feet should always be supported, and knees elevated.

As baby walks, "Toidey" Steps prove a great stimulus in interesting him to climb to his "Toidey"; to brush his teeth, wash his hands, etc.; also help him attain balance, poise and co-ordination. He develops self-reliance and learns to do for himself.

"TOIDEY" STEPS

"Toideys" Fold for Carrying

During all the pre-school years baby should have his "Toidey" wherever he goes, *so that he may always associate the function of elimination with it.* This is important for the maintenance of regularity as well as for baby's comfort and safety.

Free To You!

This new authoritative, scientific and understandable booklet outlines just how to go about training baby and developing proper toilet habits. *Write for it or ask leading dealers.* Tells all about "Toideys" ($3 and $5) and "Toidey" Steps ($6). *Ask also about "Comfy-Safe" Auto Seat (not a toilet) which locks to car and allows baby to ride in safety and comfort and "see out." ($5.50).*

Juvenile Wood Products, Inc.
Gertrude A. Muller, Pres.
Box "O" Fort Wayne, Indiana
A company devoted to the scientific study and production of training aids for the child.

SANITARY STANDARDS FOR DRINKING FOUNTAINS

Since drinking fountains have so largely displaced the common drinking cup, the public is accustomed to assume that the fountain is necessarily safe and sanitary. Certain kinds of fountains, improperly constructed or improperly operated, may be the cause of transmitting bacteria from one person to another, the Minnesota department of health points out. The department emphasizes that drinking fountains should conform to the following general requirements:

1. The jet of water emerging from the fountain should be slanting so that discharged water does not fall back onto the surface.

2. The orifices from which the water emerges should be protected in such a manner that they cannot be touched by the lips or be contaminated by water dropping from the mouth or by splashing from the base beneath the orifices.

3. An adequate supply of pure water, under sufficient pressure, properly controlled, should be provided in order to insure satisfactory operation of the fountain.

STUDY SKIN DISEASE IN WORKERS

Soap and soap cleansers were found to be the most frequent causes of occupational dermatitis in a study of 390 cases made by the New York Bureau of Women in Industry. Next followed dyes and lime. Lead, ink, flour, sugar, cinnamon, oil, chromic acid and methyl alcohol were listed in this order in a report published in the *Monthly Labor Review.*

A great variety of occupations was concerned. The largest group was classified under houseworkers, which included porters, janitors, restaurant workers and building cleaners. Of the other occupations in which women were affected, the largest group of cases was found among stenographers, who suffered skin irritations from the constant handling of carbon paper.

There is a general impression that dermatitis can be caused only by coming into contact with very injurious substances, but this is not true, the report points out. Some persons are sensitive to substances ordinarily considered harmless. One person might contract dermatitis after only a week's exposure while another might be exposed for years and never contract it. It is one of the functions of the industrial physician to determine which persons are susceptible and these should never be placed at work with materials known to be irritating.

Don't Rob your baby of sunshine

Babies' bodies need sunshine. Kept away from the sun babies grow pale and sickly, like flowers that do not get the light. The sun's rays cure and prevent many babies' diseases, build strong bones and healthy, sturdy bodies. Doctors say give your baby sun baths every day.

Vanta
Original
SUN SUIT

lets the healing rays of the sun reach little arms, legs, shoulders, chest and particularly back and spine, but protects vital parts.

Vanta Sun Shirt to match Sun Suits easily pulls on over the head to protect against cool breezes. *Vanta Sun Tam* protects the head.

Vanta Sun Garments, cotton for play and wool (suitable to wear in water) are Vanta Quality, in six brilliant California colors; sizes to 12 years. A doctor's prescription in each Sun Suit tells how to give your baby sun baths.

Vanta Linen Mesh Garments

Physicians suggested Vanta Linen Mesh Garments for babies, so we make them in Shirts, Vests and Union Suits. They absorb perspiration readily, eliminating one cause for colds, easily washed and durable. Of pure imported Irish linen with a mixture of fine lisle thread producing a soft fabric just right for babies at reasonable prices.

FREE TO YOU

Vanta Pattern, also "Baby's Outfit," a book of 64 pages on care and dressing of babies.

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Send free pattern and full instructions for making the new Vanta square-fold, pinless diaper. Also Baby's Outfit book and illustrated catalog, all in plain envelope.

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CELEBRATE TENTH YEAR OF RED CROSS LEAGUE

Ten years ago the League of Red Cross Societies was founded in Paris. A recent issue of the *Red Cross Courier* is devoted to the anniversary of that event and a recapitulation of the league's achievements.

The objectives of the league as stated at its organization were: (1) to promote Red Cross organization in every country in the world having as purposes the improvement of health, the prevention of disease and the mitigation of suffering throughout the world; (2) to promote the welfare of mankind by furnishing a medium to bring in reach of all people the new contributions to science and medical knowledge, and (3) to furnish a medium for coordinating relief work in great national or international calamities.

This federation of the Red Cross societies of the world was the idea of the late Henry Pomeroy Davison, chairman of the Red Cross War Council during the World War. Within a year after the first conference twenty-seven countries had joined the league and its activities were under way with Geneva as the general headquarters.

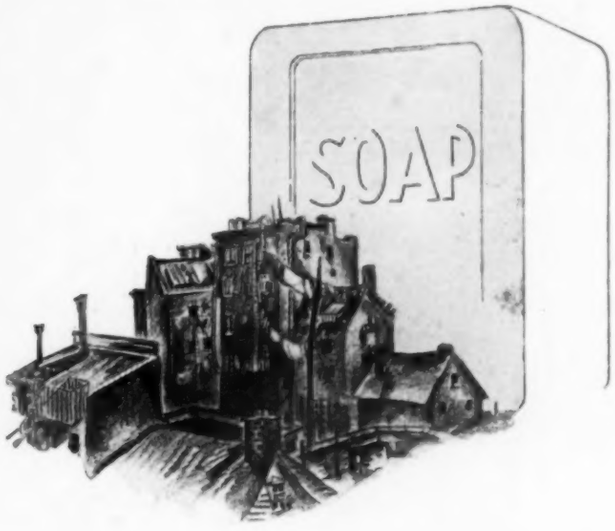
In the past ten years twenty-eight new societies have been organized, whereas only nineteen had been formed in the fifty years preceding the league's existence. Since 1919 no major disaster has occurred anywhere in the world without provoking immediate relief action from the Red Cross.

The league has also aided in the development of health activities by organizing first-aid and nursing classes and health lectures and by taking special measures to meet the needs of particular countries. Since 1919 it has distributed more than 200,000 samples of health pamphlets and 18,000 samples of health posters and has made loans of 900 health films.

Interest of children in the Red Cross as evidenced in the Junior Red Cross movement has been a notable development. More than 10,000,000 children in forty-one countries are now enrolled.

The fourth major activity of the Red Cross is the development of nursing education. The nursing division of the league has endeavored to initiate training schools in countries formerly without proper schools, to stimulate improvements in existing schools and to facilitate the training and activities of public health nurses.

Fresh air, food and rest combat tuberculosis.



Where the sun doesn't shine

THE purifying rays of the sun do not always reach the more crowded city districts. But the purification of *cleanliness* is available wherever people want it.

The causative organisms of 92 per cent of communicable diseases are transmitted through channels in which cleanliness is a most important preventive factor. That is why health officials, in their fight against disease, are emphasizing more and more the simple, economical, effective program of cleanliness.

To assist health organizations and workers, Cleanliness Institute, through its Department of Health Service, makes available without expense, lectures, slides, ideas for literature, and other aids.

For this assistance, write to the Department's Director, W. W. Peter, M.D., Dr. P.H., or to the associate Director, W. R. Redden, M.D.

CLEANLINESS INSTITUTE

ROSCOE C. EDLUND, General Director

Established to promote public welfare by teaching the value of cleanliness

45 EAST 17th ST., NEW YORK, N. Y.

Nonspi.
AN ANTISEPTIC LIQUID

Keeps Your Armpits Dry and Odorless

THERE is no excuse in allowing armpit perspiration to discolor and ruin your clothing, and its disagreeable odor to humiliate and embarrass you.

More than a million men and women keep their armpits dry and odorless and protect their clothing with NONSPI (an antiseptic liquid) used, endorsed, and recommended by physicians and nurses.

NONSPI destroys the odor and diverts the underarm perspiration to parts of the body where there is better evaporation—and need be used on an average of but two nights each week.

You, too, can have dry and odorless armpits and save your clothing. Get a bottle of NONSPI today. Use it tonight. Use NONSPI the year around—spring, summer, fall, and winter.

Your Toilet Goods Dealer and Druggist has NONSPI at 50c (several months' supply) or if you prefer

FREE TESTING SAMPLE SENT ON REQUEST

THE NONSPI COMPANY
2673 Walnut Street
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Send free NONSPI sample to

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TRADE NONSPI MARK

SCHOOL CHILD THAT FAILS MAY HAVE POOR EYES

Defects of vision are often the cause of failures in school work and in addition they may have a serious effect on the general health of children. The *Education Bulletin* of the New Jersey department of public instruction calls the attention of teachers to the following symptoms that warn of eye trouble:

Headaches.
Eye aches.
Itching, smarting or watering of the eyes.
Spasms of the eyelids.
Squinting, frowning, wrinkling of forehead or face.
Inflammation of eyes or lids.
Frequent styes.
Swelling, puffiness or drooping of lids.
Blurred or double vision, letters running into each other.
Sensitiveness to light.
Peculiar positions for the head.
Tired feeling on using the eyes.
Holding of books nearer or farther from the head than normal.
Miscalling words while reading.
Inability to read board work or tell the time by an ordinary school room clock.

BOSTON STUDIES NEEDS OF SICK CHILDREN

Serious need for convalescent hospitals was one of the weak points in facilities for the care of the sick revealed by a survey of chronically ill children made by social workers in Boston.

A special study of 173 children with heart disease cared for at the Boston City Hospital showed that the children came from the congested districts of the city. Less than one third came from homes considered adequate to care for the children who had been in the hospital for an average of fifty-four days.

Their large families lived in crowded tenements up three or four flights of stairs. The per capita weekly incomes were small—nearly three fourths were within $6. The difficulties of providing delicate children with proper care in such surroundings are apparent, observes Lucile Eaves, reporting in *The Survey*.

Convalescent placement was arranged for fifteen of the twenty-eight children who could not obtain home care. Some were placed in good foster homes, but sixty-two of those studied were not provided with the after-care that the physicians recommended and others were obliged to wait in undesirable environments until places could be found for them.

SOCIAL HYGIENE COURSE AT CHAUTAUQUA

Two courses in social hygiene are to be given at the fourth annual institute of the American Social Hygiene Association in cooperation with New York University and the Chautauqua Institution at Chautauqua, N. Y. Dr. Thomas W. Galloway of the division of educational measures of the association is to be the instructor. The courses, which are entitled "Sex and Life" and "Sex and Education," will begin July 8 and continue through August 16. The first is open to those who are qualified, in the judgment of the instructor, to pursue it to advantage while the second is open only to those who have had the first course or its equivalent.

FINDS RADIO AIDS IN CURE OF DISEASE

Since it is becoming more and more accepted that the mental condition of sick persons is as important as the physical, hospitals are recognizing the radio as an important curative agent. Anything that will brighten the invalid's dragging hours should not be disregarded, in the opinion of the *Canadian Hospital.*

A central receiving set with head phones for each bed has been found the most practical means of making radio programs available to any who want them. The principal difficulty is that only one station can be received at once and tastes vary so much that programs will of course not suit every one. One way of meeting this is to have a telephone at the bedside, which allows the patient to make known his likes and dislikes.

At the new St. Vincent's Hospital in Los Angeles, Calif., individual wires enable patients in bed to hear programs held on the roof garden of the hospital. During the two years that this outfit has been in operation there have been no objections to the radio equipment and the authorities are of the opinion that it would be unwise to omit the installation of a radio outfit, with an outlet at each bedside, from any newly planned hospital.

JES' DON'T!

Don't ever trade yer candy,
Don't swap yer chewin' gum,
Don't give away yer apple
When you've been eatin' some.

Be careful 'bout yer hankchief—
Not every feller knows
Yer musn't never use it
On yer little brother's nose.

—*Ohio Health News.*

Children feel no unfriendliness

toward this pleasant-tasting Cod Liver Oil

MOTHER doesn't mind when she has to give the children NASON'S—for children never in the least dislike taking it. NASON'S is the Cod Liver Oil with the unfailing *friendly flavor!*

And it is unfailingly rich in vitamin "A" and "D" potency.

In the Far North—within the Arctic Circle—Nason's own plants are located close to the Norwegian fishing grounds. In the American Laboratories of the Tailby-Nason Co., each lot is biologically tested—to insure a uniform high quality in NASON'S Cod Liver Oil.

May we send you a sample—with proof of vitamin potency?

Nason's palatable cod liver oil complies with the U. S. P. standards for cod liver oil. In addition, it is required to have a content of fat soluble vitamin A, determined by the U. S. P. method, of not less than 800 units per gram, and an antirachitic potency such that 0.01 Gm. per day will produce definite healing (as determined by x-ray photographs) in the leg bones of rachitic rats in eight days when added to a diet lacking in vitamin D, the rats being also deprived of ultraviolet light.

Nason's
Palatable-Norwegian
Cod Liver Oil
The Better Tasting Kind

TAILBY-NASON COMPANY
KENDALL SQUARE STATION
BOSTON, MASS.

Pharmaceutical Manufacturers to the Professions of Medicine and Pharmacy since 1905.

Gentlemen:—You may send me (without charge) sample bottle of NASON'S Palatable Cod Liver Oil.

Name.....

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My Druggist's Name.....H. 7-29

Baby's Drinking Water
Is a Matter of Vital Importance

Robust adults frequently suffer from a change of drinking water; tender babies should not be exposed to this risk.

Use *Poland Water* in the feeding bottle—it is always the same, bland and pure.

Literature Free on Request

POLAND SPRING COMPANY
680 Fifth Avenue *Dept. L* New York

APPLY all medical solutions with a DeVilbiss spray. It assures thorough application without waste.

DeVilbiss sprays have been used and prescribed by physicians for years, because they are scientifically designed and made in exact accordance with the purposes for which they are used. Sold by all druggists everywhere.

THE DeVILBISS COMPANY
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Medical Sprays and Atomizers

Do You Need Health Material?
Send for free catalog—
"Publications Dealing with Medical Subjects of Interest to the Public"
American Medical Association, 535 N. Dearborn St., Chicago

They need it *often*

In Hot Weather

With a pure, safe shampoo you can wash their heads like the rest of them—whenever they need it!

DERBAC
A unique health shampoo

contains no alcohol, as do all liquid shampoos, nor excess free alkali, as do ordinary soaps. It is made of pine tar, which benefits the scalp, and cocoanut oil, which improves the hair. Ideal to take along traveling or camping. No bottle to break!

At your druggists' or send us 25c for a 20-shampoo cake.

CEREAL SOAPS CO., INC.,
Dept. H-7, 334 E. 27th St., N. Y.

If Your Child Could Explain to You

what helps him to behave rightly, you would never have a moment's trouble with him. Reading this sane, pleasant little booklet by two trained specialists is almost the same thing!

"Training the Child to Obey"
by Smiley Blanton and Margaret Gray Blanton

Paper Cover, 22 pages

15c AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago

CHINESE PATIENTS MOVE FAMILY TO HOSPITAL

When a Chinaman gets sick he wants to take his whole family and retinue of servants to the hospital with him and furthermore he wants to bring in his own food in case he does not care for what the hospital provides, Dr. T. Dwight Sloan says in an article on Chinese hospitals in *Hospital Management*.

Such ideas do not of course find favor with physicians and nurses trained in Western scientific medicine, but there is a hospital in Peking in which they are actually carried out. Each private patient's room has connecting with it two smaller rooms in which relatives or attendants may be accommodated. If they are too numerous, the extra ones sleep on the floor or in the corridor outside the patient's door.

Western medicine, however, is rapidly taking the place of the older order. Hospitals in the Far East trace their beginnings to Christian charity. Society at large in China felt no responsibility for caring for the sick and the haphazard standards of practice in Chinese medicine made impossible the development of hospitals. But wherever Christianity has gained a hold the hospital has become an established institution, observes Dr. Sloan.

A striking feature of the hospital situation in China is the almost total absence of hospitals for the insane and of contagious disease hospitals. Tuberculosis is probably China's greatest scourge and yet only three small sanatoriums are provided for its treatment.

The medical work of the Rockefeller Foundation in China since 1915 has given great impetus to medical education and hospital practice in all the provinces. Through its scholarships the isolated workers have been able to keep abreast of advances in medicine and have received new incentives for their work.

Progress of hospitals and medical work in China depends largely on stable political conditions. Better standards have already been created by the new ministry of health. The China Medical Association is developing at present a public health program and the Nationalist government has recently appointed a central midwifery board to deal with education of midwives and with the registration of midwifery schools in China.

Be both "choosey" and "chewsy" about eating.—*American Dental Association.*

HYGIENISTS AID PARIS HOUSING COMMISSION

Postwar Paris has spread over a wide territory without regard to order in the laying of streets, sewers, water systems or electric lights. At the same time many old dwelling houses remain in central sections of the city as hotbeds of infection in the midst of new and sanitary quarters. To remedy these conditions a commission has been appointed to formulate a general plan of growth, the Paris correspondent of *The Journal* of the American Medical Association reports.

The commission at first consisted chiefly of politicians and architects, but it has recently been augmented by a number of hygienists. The opinion of this group, which includes members of the Pasteur Institute, professors in the medical schools and private physicians, will be valuable in determining what old buildings are to be demolished and in selecting locations for open air schools, playgrounds, athletic fields and dispensaries for tuberculosis and venereal disease and in the disposition of new buildings.

OUTLINE SUMMER CAMP REGULATIONS

Although the Massachusetts legislature recently failed to pass a camp licensing law the state board of health, the state association of boards of health and the New England Camp Directors' Association together have drafted a set of regulations which they urge local health officers and camp authorities to adopt. Among the important requirements are the following:

Every camp shall be supplied with water of good sanitary quality, inspected annually and analyzed. Any source of questionable water shall be sealed or removed.

Camps so located that public sewerage facilities are available shall be provided with suitable sanitary toilets. Camps not so located shall be provided with suitable equipment for the disposal of sewage. No arrangement for sewage disposal shall be located within 200 feet of any well or spring in a camp.

Each camp shall be provided with tightly covered receptacles for rubbish, garbage and refuse. The contents of these shall be removed and burned at least twice a week.

Living quarters, including dormitories, dining rooms, kitchens, laundries and other shelters shall be properly screened when necessary, rainproofed and raised from the ground.

Why It Takes a Penetrating Foam to Clean Teeth *Completely*

The difference between Colgate's and ordinary toothpastes lies in the unique, active foam released by Colgate's, the instant it is brushed on the teeth.

For this sparkling foam not only carries a polishing agent that makes teeth sparkle brilliantly . . . *it does more!* It possesses a remarkable property called low "surface-tension" which enables it to go down to the very bottom* of all the tiny crevices and fissures in teeth and gums. There, it softens and dislodges the food particles and impurities which cause decay . . . and *washes* them away in a foaming, detergent wave of cleanliness.

The reason why Colgate's acts in this way is because it contains the greatest cleansing agent known to man. This cleansing agent makes the famous Colgate foam whose action is described above and it is the presence of this particular ingredient which makes Colgate's a better cleanser; a more economical cleanser . . . different in action and in results from ordinary, sluggish toothpastes which merely polish the outer surfaces of the teeth.

***How Colgate's Cleans Crevices Where Tooth Decay May Start**

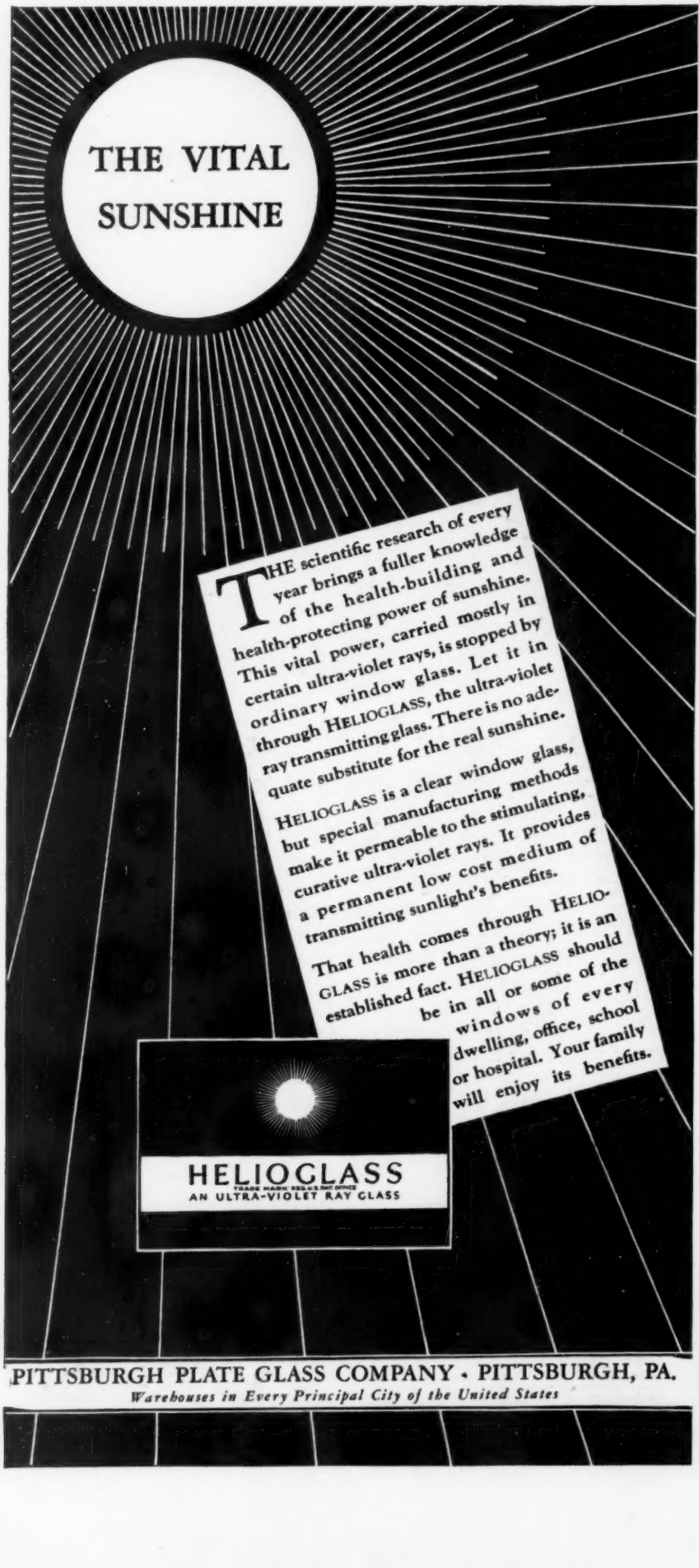
Greatly magnified picture of tiny tooth crevice. Note how ordinary, sluggish toothpaste (having high "surface-tension") fails to penetrate deep down where the causes of decay may lurk.

This diagram shows how Colgate's active foam (having low "surface-tension") penetrates deep down into the crevice, cleansing it completely where the toothbrush cannot reach.

COLGATE, Dept. B-1801, 595 Fifth Ave., New York. Please send a trial tube of Colgate's Ribbon Dental Cream, with booklet "How to Keep Teeth and Mouth Healthy." FREE

Name.....

Address.....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PLANNING A SCHOOL HEALTH PROGRAM

A state health program for public schools was discussed by New Jersey school executives at a recent series of sectional conferences. Dr. Allen G. Ireland, director of physical education and health education, outlined a program in which he set forth the following objectives:

1. To apply the principles of safe and healthful living to the educative or schooling process.
2. To protect the physical and mental health of the pupil while at school.
3. To establish measures for determining the health status of pupils, particularly with regard to deviations from the normal, whether physical or psychologic.
4. To promote with the cooperation of the home, measures for the removal or correction of handicapping physical and mental defects.
5. To establish in the school preventive measures that will lessen the incidence of communicable disease.
6. To provide for the training and instruction of the pupil in the activities and principles of healthful living.

SYMPTOMS OF INFANTILE PARALYSIS

In early diagnosis lies the best hope of preventing the serious crippling that follows infantile paralysis. This is the conclusion of Dr. Lloyd W. Aycock of the Harvard Medical School, who has made extensive investigations of the disease.

Infantile paralysis usually begins abruptly with fever, headache and upset digestion. The fever is not high, but the child is more than usually prostrated. Tremors and twitching of the muscles and an uncertainty in movements of the arms and legs are characteristics of the early stage. The most suggestive sign is stiffness of the spinal column and neck. The neck is held rigid and in some cases the child cannot sit up comfortably.

The paralysis is due to destruction of the nerve cells in the spinal cord which govern the movement of muscles. If serum from the blood of persons who have had the disease is given before this destruction has taken place, there is a chance of cure.

After the paralysis has occurred care and treatment with specially designed exercises can do much for the affected muscles.

USE REALISTIC METHODS TO TEACH FIRST AID

Since first aid methods are so closely allied to disaster relief work, national Red Cross societies in practically every country have organized methodical courses of instruction in life-saving at sea, in the mountains, and in the mines.

Most realistic demonstrations are held for training purposes. Dr. Réné Sand describes in *The World's Health* a demonstration in Holland in which a train was chartered and the engine actually made to leave the rails in the staging of a sham railway accident. In Denmark the wreckage of a real aeroplane was scattered in a wood and the personnel faked the injured so well that an uninitiated observer fainted at the sight of an open fracture of the leg from which flowed a stream of red dye.

SAVING OF BABIES IS MEASURE OF PROGRESS

The durability of the human race in a biologic sense depends primarily on our attitude toward childhood, Dr. Ray Lyman Wilbur said in an address at the dedication of new medical buildings at the University of Iowa.

"It is only within the last few decades that we have become aware of the minute foes of the human race and particularly of their significance in childhood," Dr. Wilbur continued. "It was formerly taken for granted that every child would have to pass through a series of illnesses during the process of attaining maturity. That there was wastage in this process was evident, but until vaccination against smallpox was devised no clear-cut scientific conception of the possibilities of protecting the body of the child was brought into the thinking of mankind.

"As long as disease was looked on as inevitable there seemed nothing to do but accept it, but with our present conception of medicine based on pathology, in which we judge disease by the scars and injuries left in the tissues of the body itself and our conception of disease as largely based on a failure of function, we approach the question of treatment and control from a new angle. We think of medicine in terms of prevention.

"The present test of the success of modern preventive medicine is the prolongation of life that is brought about," Dr. Wilbur asserted. "The saving of babies through proper nutrition and protection from the microscopic organisms of disease is the basis of this advance."

HAPPY THOUGH HOUSEBOUND

With rain a-pouring and wind a-blowing children become housebound and if unable to divert their boundless energies get cross as sticks—as we all know. But what few know is that with a "BUSY KIDDIE" they entertain themselves so gloriously indoors that mothers write us unsolicited what a perfect blessing it has been to the whole household.

Cheap at three times its price—as one mother put it.

"BUSY KIDDIE" SET $7.75 EXERCISER $2.50 Extra

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In every picture the patented "HANGER" is seen hugging the door trim.

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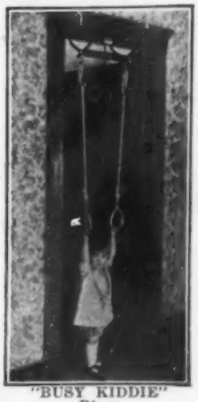

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Since the introduction of Pollen Antigen Lederle, each year has added evidence to the value of this product in the prevention or relief from symptoms of Hay Fever, and each year an increasing number of physicians have familiarized themselves with the Hay Fever problem and are relieving patients of their seasonal attacks.

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may be commenced as late as two weeks before the date of the expected attack. Fifteen graduated doses of an appropriate Antigen are required. Patients usually suffer little inconvenience from the injections, and many are completely protected from Hay Fever attacks.

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